THE CHEMIST AND DRUGGIST

OFFICE,
COLONIAL BUILDINGS—44A CANNON STREET, LONDON, E.C.
For particulars of subscriptions, advertisements, &c., see the centre of the book.

THE MONTH

The International Pharmaceutical Congress at St. Petersburgh met for its first *séance* on Friday morning, August 14, and finished work on the following Tuesday. Several scientific communications were read, and discussions ensued. The most interesting, though not quite pharmaceutical, was on the application of spectrum analysis to cremation, by M. Pœhl, of St. Petersburg. The destruction of all proof of foul play by the system of burning the dead has been one of the most serious objections raised against cremation. M. Pœhl ingeniously suggests the application of the spectrum. It will be a bold thing, however, to hang a man on the strength of such delicate evidence as that. With regard to the pharmaceutico-political subjects which were expressly submitted to this Congress, the following results were arrived at. It was agreed that the principal of a pharmacy ought to be responsible for the infringement of medical laws, or for errors or frauds in his establishment, only so far as those were made with his knowledge. Outside that, assistants ought to be personally responsible. It was decided that the governmental inspection of pharmacies ought to be entrusted to two officers, one of whom should be a pharmacien actually engaged in practice, and further that he should be elected by the general body. With regard to an International Pharmacopœia, a resolution was passed that the time for such a work had arrived. The Congress generously assures us that an International Pharmacopœia is not intended to replace local Pharmacopœias, but that it is desirable that when the latter are prepared their authors should accept and observe the general principles of the International Pharmacopœia. A committee was then appointed to take the subject into consideration. St. Petersburgh was to be the central seat of this committee. An invitation from Philadelphia for the next Congress was read, and Mr. Greenish proposed London, but no decision was come to. A hope was however expressed that the Congress should meet again somewhere within the next five years.

The utter uselessness of these international congresses could not be more forcibly demonstrated than it was by the resolution on an International Pharmacopœia. Neither the Congress nor its committee will ever produce one, and if they should do it would be merely the *pastiche fastidieux* of a few scientific fanatics. But to sit in solemn conclave and issue their advice to the various nations of the world, urging them to submit to a pharmaceutic faith not yet drawn up, is so supremely silly that we trust the British Pharmaceutical Society will not in future patronise the farce by officially sending some of its members to the uttermost parts of the earth under the sonorous appellation of delegates. The English delegates (Messrs. Greenish and Sutton) have promised a report of their stewardship. Will they be good enough to avoid all stock phrases about the extension of universal brotherhood and the like, and tell us plainly, as practical pharmaceutists, whether they can see even the promise of any fruit from such assemblies.

It is to be noted that the new regulations of the Board of Examiners come into force on October 1 next. Candidates will be required to prove the possession of a practical acquaintance with the elements of qualitative analysis, which will probably be tested by the submission of certain solutions, the chief ingredients of which will have to be detected. Correct ideas in respect to doses, and a more accurate knowledge of the chemical and pharmaceutical processes by which Pharmacopœia products are obtained, are the points of advanced severity which will henceforth be demanded. The regulation requiring a certificate that the candidate has attained the age of twenty-one will come into force on January 1, 1875, and that necessitating a previous three years' pupilage to the business on January 1, 1877.

The last meeting of the Pharmaceutical Council did not produce any subjects of much interest, unless it be interesting to know that a chimney on the Society's premises was in a dangerous condition. Readers will be surprised to hear that the Council ordered it to be repaired without referring it to a committee or adjourning the consideration of the question to a future meeting.

There is, it seems, one poison to which Mr. Vizer would not grant free circulation. Writing to a contemporary, he mourns over "the poison of rank atheism with which a late number of your journal was unfortunately contaminated," the allusion being to Tyndall's Belfast address. Mr. Vizer immediately afterwards favours us with a specimen of his critical ability by quoting as the point of attack Tyndall's remark that "the whole process of evolution is the manifestation of a Power absolutely inscrutable to the intellect of man." This is exactly the sentence which a more ordinary intellect would quote in refutation of the inaccurate charge. A burst of responses called forth by Mr. Vizer's letter indicates that orthodoxy at any rate is not the ruling passion of pharmaceutists. The fitness of some of the correspondents on either side for a theological dispute is abundantly demonstrated by the abusive language in which they indulge.

The 22nd annual meeting of the American Pharmaceutical Association was fixed for September 8, at Louisville, Kentucky. We hope to have some report of its proceedings for our next.

The statistics of the New York Board of Pharmacy indicate the wide area from which the American drug trade is recruited. During the year ending June last they registered 62 proprietors and 101 assistants. Of the proprietors there were:—Natives of the United States, 24; Germany, 19; England, 4; Ireland, 9; Canada, 3; and Austria, Russia, and Cuba, 1 each. Of the assistants, 37 were born in the United States, 32 in Germany, 8 in England, 5 in Ireland, 3 in Canada, 4 in France, 3 in Russia and Poland, 2 each in Scotland, Austria, and Sweden, and 1 each in Norway, Cuba, and Costa Rica.

Our New York correspondent writes:—"Do not advise any chemists' assistants to come here this year. The market is overstocked."

Those who either love or hate homœopathic doctrines will be interested in a vigorous defence of them with which we have been favoured by Dr. W. B. Scott, of Tunbridge Wells.

We regret that we have to announce the death of Mr. Charles Harley Savory, one of the partners in the firm of Savory & Moore. Mr. Savory had been ill for six months, and latterly all hope of recovery had been abandoned, the occasion of the malady being a cyst on the brain. Shortly before his illness Mr. Savory had commenced to interest himself in the public affairs of pharmacy; and those who knew him best were very anxious to enlist his services on the Pharmaceutical Council, where his thorough business habits and wide sympathies would have been most valuable. His early death, therefore (at the age of 44), may be regarded as a public as well as a private loss.

The centennial of American chemists at the grave of Priestley on August 1 was an interesting, if a somewhat romantic, event. Northumberland, on the banks of the Susquehannah, is said to be a beautiful spot, and there something like a hundred scientific chemists gathered to do honour to the memory of the extraordinary man who discovered oxygen that day a hundred years ago. Priestley's poor lot of chemical apparatus was on exhibition, and some of his descendants came from remote parts of the universe to meet the pilgrims. After a series of addresses in his honour, the assembly was ultimately adjourned in proper form until August 1, 1974.

The Commission appointed by the German Government to investigate the present "close" system of pharmacy in that country has been holding its sittings, but has kept its discussions secret. It is, however, reported that out of thirty members only seven voted for free trade. The whole affair is looked upon by some of the influential journals as a mere trick to choke the agitation which has arisen on this question.

MR. J. T. DAVENPORT.

MR. DAVENPORT'S portrait will be interesting to the trade from double reasons. In the first place, he enjoys a high pharmaceutical reputation, while commercially his career as the proprietor of chlorodyne has been so prominent for many years past that a few lines respecting the medicine and the gentleman himself can hardly be out of place.

We are not afflicted with the very proper disease of patent-medicine-phobia. We are painfully aware of the quantity of rubbish with which the credulous public is daily dosed by means of advertised remedies; but, notwithstanding the extreme diligence of those philanthropists who seek a law to check this amusement, we confess to a very peaceful equanimity as to the consequences of the habit. As a matter of fact, a disinterested enquirer would have much difficulty in discovering many cases of injury to health, which might unquestionably be traced to indulgence in patent medicines. We state this not to advocate the system in the trade, but merely to counterbalance the absurd insinuations which, with a profession of superfine morality, often emanate from medical sources. Professional medicine will be able to abuse her illegitimate sister for her empiricism with a better grace when her own conduct shall be more scientific. Still, as we have intimated, we cannot pretend to defend the practices of patent medicine proprietors as a whole; and in selecting for our portrait one of the most successful of them we are guided in our choice by exceptional reasons. Mr. Davenport's exploitation of chlorodyne has been marked not only with great success, but also by an entire absence of the arts usually adopted to gain fame for a secret medicine, though, at the same time, he has given as good an example of bold enterprise as even the most reckless could desire.

People are often disposed to attribute to mere luck the success of patent medicines. When once they become noted, their success seems so easy that one is apt to forget the courage, the patience, and the ability which have been expended on them before a return was yielded. The truth is that the qualities requisite to make a great success in this line are just such as would as certainly ensure good results in any other branch of business, and as in those instances so in those we are inclined to notice more especially those which make a reputation, and to disregard those which, from want of the essential system, fail and perish.

The business now conducted by Mr. Davenport was formerly in the hands of a Mr. Richard Ward, to whom Mr. Davenport was articled as a pupil in 1833. During the next few years he attended lectures on chemistry at the London University, under Professors Turner and Graham. In 1839 Mr. Ward died, and Mr. Davenport purchased the business. In addition to the dispensing trade, he cultivated the manufacture of pharmaceutical chemicals, especially the scale preparations of iron and quinine, for which he soon gained, and still retains, a high reputation. In the London Exhibition of 1851, and that at Paris in 1855, he was awarded medals for these.

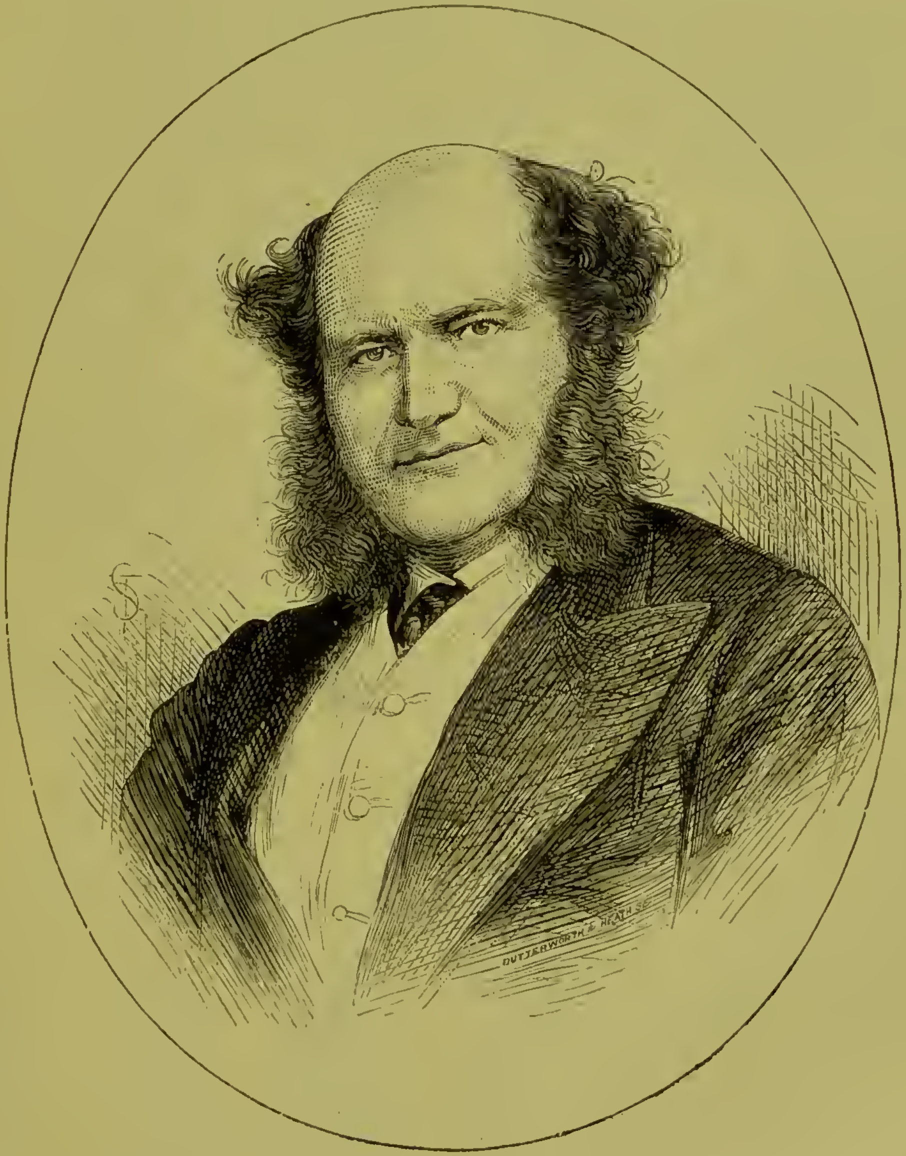
Mr. Davenport became a prominent member of the Pharmaceutical Society soon after its foundation, and in 1850 was appointed an examiner, which position he has ever since retained, thus handling at one point in their lives most of the pharmacists who have qualified themselves for their business during the past quarter of a century. In 1855 Mr. Davenport was elected president of the Society, having previously served two years as vice president. His year of office having occurred previous to the establishment of this journal, we may be excused for regarding it as in pre-historic times.

Chlorodyne was a compound invented by Dr. J. Collis Browne, a surgeon in the Indian army, who brought it to England in the year 1856. We have heard it stated (it is only a rumour, and we do not guarantee its truth) that Dr. Browne offered his formula at that time and all interest in its sale for a hundred pounds. However this may be, Mr. Davenport declined to purchase until he had satisfied himself of the value of the medicine, and we believe that ultimately an arrangement was come to which left to Dr. Browne a share in the profits. Mr. Davenport induced some surgeons to test the new medicine in several hospitals, and the results were so satisfactory that it was soon prominently introduced first to the profession and then to the public. There is no doubt about the value of this medicine. It has forced itself into the prescriptions of men who, as a matter of etiquette and principle, hate secret remedies. It has found its way all over the earth, and even in such countries as Germany, Russia Norway, &c., where the patent medicine trade is comparatively unknown or forbidden, Collis Browne's chlorodyne is an almost invariable article of stock. This great success is due mainly, no doubt, to its merits, but also to some extent to the simple and straightforward manner in which it has been placed before the profession. It has been advertised, perhaps, in every printed language on earth, but there has never been anything like claptrap or misrepresentation employed to aid its sale. Everyone must acknowledge that Mr. Davenport has set a bright and honourable example to those who would venture on the slippery paths of patent medicine working.

Lately some outcry has been raised because chlorodyne, or rather an imitation of it, has not been inserted in the Pharmacopœia Supplement. There is something exquisitely humourous in that delicacy of conscience which shrinks from prescribing a secret compound, though the effects of that compound are as well known as if it were a herb or a mineral, but which, without the smallest scruple, would officially rob an inventor of the rightful fruits of his skill and enterprise. To this squeamishness, we presume, is due the presence of Charta Sinapis in our Pharmacopœia. Everybody admits that this article can never be made by the official process equal in elegance to M. Rigollot's beautiful product. But Medical Council morality is so severe that it will even interfere with its own convenience in order to spoil the unqualified Egyptians who venture into the domain of medicine. Mr. Davenport's property will be some day perhaps treated likewise; the only reason why it waits is that the doctors have not yet been able to satisfy themselves as to it mula. The compliment is obvious; the justice is, to say least, questionable.

THE CHEMIST AND DRUGGIST PORTRAIT GALLERY.

XII.


BUTTERWORTH & HEATH SC.

Yrs truly
J T Davenport

MR. J. T. DAVENPORT.

Educational Information.

THE 1st of October will be generally the commencement of the educational campaign in pharmaceutical and medical schools. Our advertisement pages contain the announcements of many of the leading schools, and we here append the information necessary to the embryo pharmaceutist or medical practitioner.

PHARMACEUTICAL DIPLOMAS.

As our readers are aware, the new regulations of the Board of Examiners come into force on October 1 next. We print these in detail below. The right to practise as a chemist and druggist in Great Britain is, by the Pharmacy Act of 1868, restricted to such candidates as pass (*a*) the Preliminary examination, and (*b*) the Minor examination of the Pharmaceutical Society. The Major examination is purely honorary, and on passing it the title of Pharmaceutical Chemist is obtained. No curriculum of study is necessary, but it is to be understood that on and after January 1, 1875, candidates for the Minor examination will have to produce certificates of having attained the age of 21 years; and that from January 1, 1877, each candidate must produce certificates to the effect that for three years he has been registered and employed as an apprentice or student, or has otherwise for three years been practically engaged in the translation and dispensing of prescriptions.

Regulations of the Board of Examiners.

The Board of Examiners in London meet for conducting the Major and Minor examinations monthly (excepting August and September). Candidates must give notice to the Registrar of their intention to present themselves for examination, and pay the fee on or before the first day of the month in which the examinations are to be held. Candidates will receive notice from the Registrar of the date on which they will be required to present themselves.

The Board of Examiners in Edinburgh meet for conducting the Major, Minor, and Modified Examinations as often as required. Notice is given in the *Pharmaceutical Journal* when meetings take place. Secretary to the Board in Scotland, John Mackay, 119 George Street, Edinburgh.

THE FIRST OR PRELIMINARY EXAMINATION.*

(For Registration as Apprentices or Students.)—*Fee, Two Guineas.*

This Examination is held at the following centres, throughout Great Britain, at Twelve noon, on the first Mondays in January, April, July, and October in every year.

Aberystwith
Aberdeen
Barnstaple
Berwick-on-Tweed
Birmingham
Boston
Brighton
Bristol
Cambridge
Canterbury
Cardiff
Cardigan
Carlisle
Carmarthen
Carnarvon
Cheltenham
Chester
Colchester
Darlington
Doncaster
Dorchester
Dumfries
Dundee
Edinburgh
Exeter
Glasgow
Guernsey
Hereford
Hull
Inverness
Jersey
Leamington
Leeds
Leicester
Lincoln
Liverpool
London
Lynn
Macclesfield
Manchester
Newcastle
Northampton
Norwich
Nottingham
Oxford
Perth
Peterborough
Plymouth
Portsmouth
Preston
Reading
Salisbury
Scarborough
Sheffield
Shrewsbury
Southampton
Stafford
Swansea
Taunton
Truro
Worcester
York

Candidates must give notice to the Registrar on a printed form of application, to be obtained from him, and pay the fee not less than *fourteen* days prior to that on which the examination is to be held. Each candidate must state at which of the centres he desires to present himself.

The Examination is a written one, and comprises—Latin,—translation into English of a paragraph from the first book of Cæsar ("De Bello Gallico"), or a passage from each of the following works:—Pereira's "Selecta è Præscriptis," and the last edition (Latin) of the London Pharmacopœia.

After December 31, 1874, the "Selecta è Præscriptis" and the London Pharmacopœia will be omitted from the subjects of this examination.

Latin Grammar.

English Grammar, Composition.

The first four rules of Arithmetic, Simple and Compound, Vulgar Fractions, and Decimals.

Candidates will also be required to possess a thorough knowledge of the British and Metrical systems of Weights and Measures.

MINOR EXAMINATION.

(For Registration under the Pharmacy Act, 1868, as Chemists and Druggists.)—*Fee, Three Guineas.*

Candidates for this Examination must have passed the First or Preliminary Examination.

The following form the subjects of examination:—

Prescriptions.—The candidate is required to read without abbreviation autograph prescriptions; translate them into English; and render a literal as well as an appropriate translation of the directions for use. To detect errors, discover unusual doses, and have a general knowledge of Posology; also to render in good Latin ordinary prescriptions written in English.

Practical Dispensing.—To weigh, measure, and compound medicines; write the directions in concise language in a *neat and distinct* hand; to finish and properly direct each package.

Pharmacy.—To recognise the preparations of the Pharmacopœia which are not of a definite chemical nature, and have well-marked physical characters, such as extracts, tinctures, powders, &c.; to give the proportions of the active ingredients and possess a *practical* knowledge of the processes, and the principles of the processes, by which they are made, and of the best excipients and methods of manipulation for forming emulsions, pills, &c.

Materia Medica.—To recognise specimens of roots, barks, leaves, fruits, resins, gums, animal substances, &c., used in medicine; give the botanical and zoological names of the plants, &c., yielding them, and the Natural Families to which they belong; name the countries and sources from which they are obtained, the officinal preparations into which they enter, and judge the quality and freedom from adulteration or otherwise of the specimens.

Botany.—To recognise the more important indigenous plants used in medicine. To possess a general knowledge of the elementary structure of plants, and the structure and distinctive characters of roots, stems, leaves, and their parts. To name and describe the various parts of the flower.

Chemistry.—To recognise the ordinary chemicals used in medicine. To possess a *practical* knowledge of the processes by which they are produced, the composition of such as are compound, and explain the decompositions that occur in their production and admixture, by equations or diagrams. To determine practically, by means of tests, the presence in solution of the chemicals in common use, and explain the reactions which occur in each case. To possess a general knowledge of the laws of chemical philosophy, and a *practical* knowledge of the means of determining specific gravities, densities, and temperature, and of the instruments appertaining thereto, and the physical and chemical constitution of the atmosphere.

MAJOR EXAMINATION.

(For Registration as Pharmaceutical Chemists under the Pharmacy Act, 1852.)* *Fee, Five Guineas.*

Candidates for this examination must have passed the Minor examination at least three months previously.

Materia Medica. This comprises a *practical* knowledge of the methods of estimating the value of important drugs, of obtaining their active proximate constituents in a separate state; of identifying them and ascertaining their purity or impurity by tests.

Botany.—This comprises an intimate acquaintance with the parts of a flower, fruit, and seed; the functions and mode of arrangement of the different organs of plants; a knowledge of the general principles of classification, and of the Linnæan and De Candolle's systems. The candidate must be able to distinguish practically between each of the following Natural Orders:—Ranunculaceæ, Papaveraceæ, Cruciferæ, Malvaceæ, Leguminosæ, Rosaceæ, Cucurbitaceæ, Umbelliferæ, Compositæ, Gentianaceæ, Convolvulaceæ, Solanaceæ, Antropaceæ, Labiatæ, Scrophulariaceæ, Polygonaceæ, Euphorbiaceæ, Orchidaceæ, Iridaceæ, Liliaceæ, Melanthaceæ, Graminaceæ; and refer to their respective orders such specimens as may be shown to him.

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* Certificates of having passed the Local Examinations of the Universities of Oxford, Cambridge, or Durham, the Examination of the College of Preceptors, or those of any legally constituted Examining Body previously approved by the Council, *provided Latin and Arithmetic be included in the subjects*, are accepted in lieu of this examination.

* Exempt from service on all Juries and Inquests under Juries Act, 1862.

Chemistry.—This comprehends an intimate knowledge of the laws of chemical philosophy, a *practical* knowledge of the nature and properties of the elements and their compounds, both organic and inorganic, especially those used in medicine or the arts. The different combinations and decompositions must be explained by equations; also the *qualitative* analysis of the more important chemicals, *e.g.*, Nitrates, Chlorides, Carbonates, Sulphates, Phosphates, Oxalates, Tartrates, &c., and the detection of impurities in them, and the *volumetric* estimation of the strength of all Pharmacopœia preparations in which standard solutions are ordered to be used.

An elementary knowledge of the properties of light, heat, electricity, and magnetism is also required.

If a candidate fail to pass either of the examinations, the fee will be returned, less one guinea, but he will be admitted to a subsequent examination, after an interval of three months, on giving the usual notice and payment of the full fee.

PRIZES.

Minor. Books of the Value of Two Pounds.—Associates who, in the opinion of the Board of Examiners, exhibit a certain proficiency in the several subjects of this examination, are placed on the list of honours and are entitled at the end of the Session in which they passed to compete for a Prize of Books, awarded by the Council, of the value of 2*l*. The competitive examination is a written one, embracing questions on the translation of prescriptions, dispensing, and practical pharmacy.

Major. Pereira Medal.—Persons who were Associates at the time of passing the Major Examination, and who exhibited a certain proficiency in the several subjects of the examination, are placed on the list of honours, and are entitled, at the end of the session in which they passed, to compete for the Pereira Medal. The competitive examination is a written one, embracing questions on Materia Medica, Botany, and Chemistry.

PHARMACEUTICAL EDUCATION.

The School of Pharmacy of the Pharmaceutical Society provides the following courses:—

Sixty lectures on Chemistry and Pharmacy, by Professor Redwood, on Monday, Tuesday, and Wednesday mornings, at 9 o'clock, commencing on Monday, October 5. There will be two of these Courses during the Session, that which commences in October and ends in February being repeated in the following five months. Each course is complete in itself.

FEES.

	£	s.	d.
One Course (five months)	2	2	0
An entire Session (two courses)	3	3	0
Perpetual admission	4	4	0

Forty lectures on Botany and Materia Medica, by Professor Bentley, on Friday and Saturday mornings, at 9 o'clock, commencing on Friday, October 2. There are two of these Courses during the Session, that which commences in October and ends in February being repeated in the following five months. Each course is complete in itself.

In addition to these two courses, one on Systematic and Practical Botany, consisting of twenty lectures, will be delivered (in the Royal Botanic Society's Gardens, Regent's Park), commencing in May and ending in July.

FEES.

	£	s.	d.
Botany and Materia Medica, one Course (five months) ..	1	11	6
An entire Session (two Courses)	2	12	6
Systematic and Practical Botany	1	1	0
One Course on Botany and Materia Medica, and one on Systematic and Practical Botany	2	2	0
Two Courses on Botany and Materia Medica, and one on Systematic and Practical Botany	3	3	0
Perpetual Admission to all the Courses	4	4	0

Names of students desiring to attend Lectures will be received by the Assistant in the Lecture-room.

Practical chemistry is taught in the laboratory under the direction of Professor Attfield, Ph.D., F.C.S. Demonstrator, R. H. Davies, F.C.S. Assistant-Demonstrator, Mr. Cleaver. The Laboratories will be opened on Thursday, October 1, at 10 a.m.

There is no general class for simultaneous instruction, each student following an independent course of study, always determined by his previous knowledge; pupils can therefore *enter for any period at any date.*

The Laboratories are open from ten o'clock in the morning until five in the afternoon daily, except on Saturdays, when they are closed at two o'clock.

FEES.

Hours of Study	One Month	Two Months	Three Months	Five Months	Ten Months
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
10.0 to 5.0 daily (Sat. 10.0 to 2.0)	4 4 0	7 7 0	10 10 0	15 15 0	26 5 0
Three days weekly or three hours daily	2 17 6	4 17 6	6 16 6	10 10 0	17 17 0
Two days weekly or two hours daily	2 2 0	3 10 0	4 17 6	7 7 0	12 12 0

Medals and Certificates of Honour are offered by the Counci to students at this school.

At the South London School of Pharmacy, under the direction of Dr. Muter, the educational course commences on September 15 and lasts till July 20, and the following courses of Lectures, &c., are delivered several times during the session:—60 lessons in Latin; 60 lectures on Botany; 60 lectures on Materia Medica; another month's course on Pharmacy; 60 lectures on Theoretical Chemistry. A junior course (three months), and a senior course (six months) of Practical Chemistry.

In connection with this school Mr. H. Williams Bailey also prepares candidates for the Preliminary Examination.

Mr. Braithwaite, of the North London School of Chemistry conducts a laboratory and evening classes in Chemistry, Materia Medica, Botany, and Latin.

For other announcements respecting pharmaceutical education we must refer to our advertisement pages.

MEDICAL DIPLOMAS.

The General Medical Council fixes twenty-one as the earliest age at which a candidate for any professional license shall be admitted to his final examination, the age in all instances to be duly certified. Previous to this final examination, he must have been registered as a medical student at least forty-eight months, and must have gone through a course of professional study, comprehending attendance during four winter sessions or three winter and two summer sessions at a recognised school. The Medical Council also makes certain claims with regard to the examinations themselves. With regard to the Preliminary, which must be passed before a medical student may be registered as such, it is required that it shall include English language (including Grammar and Composition), Arithmetic (including Vulgar and Decimal Fractions), Algebra (including Simple Equations), Geometry (first two books of Euclid), Latin (including Translation and Grammar); and one of the following optional subjects: Greek, French, German, Natural Philosophy (including Mechanics, Hydrostatics, and Pneumatics).

For the Professional Examination it requires, "That the Professional Examination for a license be divided into two parts; the first embracing the primary or fundamental branches directly connected with the practice of medicine or surgery. That the former be not undergone till after the close of the winter session of the second year of professional study; and the latter, or final examination, not until after the close of the prescribed period of professional study.

"That the examination in Physics, Botany, and Natural History may be undergone at an earlier period than the first Professional Examination.

"That the Professional Examinations be conducted both in writing and orally, and that they be practical in all branches in which they admit of being so.

"That excellence in one or more subjects should not be allowed to compensate for failure in others; and that if a candidate be rejected for failure in any one subject he should be re-examined in all."

The foregoing are the requirements of the General Medical Council, which holds, and can withhold, the right of registration. The reader will bear in mind that these stipulations have to be observed by all the examining bodies, and this will save us much repetition.

The examining bodies themselves are the following:—

The University of Oxford, which grants the degrees of **M.B.** and **M.D.** The medical student must pass the requisite examinations for the degree of B.A., and afterwards spend two years in study prior to the first or scientific examination for the degree of Bachelor of Medicine, and two years more prior to the final or practical examination for the same degree. Evidence must be brought to show that he has studied the practical parts of his profession in a first-class hospital. A dissertation has to be publicly read three years after the M.B., for the degree of M.D.

The University of Cambridge, besides **M.B.** and **M.D.**, grants the degree of **M.C.** (Master in Surgery). For M.B. five years of medical study are required, except in the case of medical students who have graduated with honours as Bachelors of Arts, four years being then sufficient. There are three examinations. The *first* in Mechanics and Hydrostatics, Chemistry (with heat and electricity), and Botany. The *second*, in Anatomy and Physiology (Human and Comparative), and Pharmacology. The *third* (at the conclusion of medical study), in Pathology and the Practice of Physic, Clinical Medicine, and Medical Jurisprudence. The examinations are partly in writing and partly oral, in the hospital, and take place twice annually. Previously to the first examination, lectures must have been attended on Chemistry (with manipulations) and Botany. Previously to the second examination, the student must have attended lectures on Anatomy and Physiology (Human and Comparative), Materia Medica, Pharmacy, and Pathology; have dissected one season; and attended hospital practice one year. Previously to the third examination, lectures must have been attended on the Principles and Practice of Physic, Clinical Medicine, and Medical Jurisprudence; also Hospital Practice for three years.

The degree of M.D. may be taken three years after M.B. The regulations are similar to those at Oxford.

For the degree of M.C., the candidate must have passed the three examinations for M.B., and have attended lectures on Human Anatomy (a second course), on the Principles and Practice of Surgery, Clinical Surgery, Midwifery (with ten cases); also a second season of Dissections, three years' surgical practice at a recognised hospital, and a house-surgeoncy or dressership for six months. He is then required to pass an examination in Surgical Anatomy, Pathology, the Principles and Practice of Surgery, and Clinical Surgery.

The University of London stipulates for the **M.B.** degree. (1) The Matriculation Examination, or a degree of Arts, is accepted from the Universities of either Sydney, Melbourne, or Calcutta. (2) The Preliminary Scientific Examination and two examinations in medicine. The student must also have been engaged in professional studies at least four years subsequent to matriculation. The degree of **M.D.** may be competed for four years, or in some cases, five years after the M.B. degree has been taken. It includes logic and moral philosophy and medicine, including practical examination in clinical medicine. The University of London also grants the degrees of **B.S.** and **M.S.** (Bachelor and Master in Surgery). These comprehend the M.B.

The University of Durham grants a license in medicine four years after matriculation, **M.B.** three years later, and **M.D.** one year later still, provided that the requisite courses are fulfilled and examinations passed. *Licentiates* and *Masters in Surgery* are also degrees granted by this University. These do not necessarily require that all the examinations for M.B. shall be passed.

The University of Edinburgh confers the degrees of **M.B.**, **C.M.**, and **M D.** The first must be passed before either of the others are granted. For the M.B. and C.M. degrees a course of four years, at least, of medical and surgical study is required, and each candidate is examined both in writing and *vivâ voce*—1st, on Chemistry, Botany, and Natural History; 2nd, on Anatomy, Institutes of Medicine, Materia Medica, including Practical Pharmacy and Pathology; 3rd, on Surgery, Practice of Medicine, Midwifery, and Medical Jurisprudence; 4th, clinically on Medicine and on Surgery in a hospital. For the M.D. degree two years of medical and surgical practice must elapse, the candidate must be a graduate in Arts, and must submit a thesis composed by himself on any branch of knowledge comprised in the professional examinations for the M.B. degree.

The University of Glasgow grants the same degrees, and provides curricula and examinations similar to those of the University of Edinburgh.

The same may be said of the **University of Aberdeen.**

Also of the **University of St. Andrew's**; except that by the latter the degree of Doctor in Medicine may be conferred on any registered medical practitioner above the age of forty years whose professional position and experience are such as, in the estimation of the University, to entitle him to that degree, and who shall, on examination, satisfy the medical examiners of the sufficiency of his professional knowledge; provided always, that degrees shall not be conferred, under this section, to a greater number than ten in any one year.

The University of Dublin (Trinity College) grants the degrees of **M.B.**, **M.D**, and **M.Ch.**, and also licenses in medicine (**L.M.**) and surgery (**L.S.**). To take the degree of M.B. it is required that the candidate shall also take that of B.A., and shall have attended hospital and lectures for four years. The M.D. degree is granted to an M.B. of three years' standing, who must perform exercises before the Regius Professor of Physic. The degree of M.Ch. demands a curriculum somewhat different from, though of the same length of time, as that required for the M.B. examination. A licentiate in medicine or surgery has passed the medical course and examinations required for M.B. or M.Ch. respectively, but the fees are somewhat lower. He can, however, afterwards take up his degree.

The Queen's University of Ireland comprises the Queen's Colleges of Belfast, Cork, and Galway, each of which possesses a Faculty of Medicine. The degrees of **M.D.** and **M.Ch.** are granted by this University. The curriculum for either extends over four years, and comprehends the usual subjects.

Besides the foregoing Universities, the following Corporations grant licenses to practise:—

The Royal College of Physicians, London. There are Licentiates, Members, and Fellows of the Royal College of Physicians, London. The licentiates have passed a Preliminary Examination in Arts, and two other professional examinations, besides giving evidence of at least four years of professional education as a registered medical student. The fee is fifteen guineas. The course of study previous to the examination for membership is almost similar to that prescribed for the licentiates. Members may also be admitted, after a certain examination, who have taken the degree of M.B. at other universities. The fee is thirty guineas. The members of the College are eligible for Fellowship.

The Royal College of Surgeons of England. To become a member the following course is prescribed. Preliminary Examination:—The following are the subjects for 1871 and 1872:—

Part (1).—Compulsory Subjects:—1. Reading aloud a passage from some English author. 2. Writing from dictation. 3. English Grammar. 4. Writing a short English composition; such as a description of place, an account of some useful or natural product, or the like. 5. Arithmetic. No candidate will be passed who does not show a competent knowledge of the first four rules, simple and compound, of Vulgar Fractions, and of Decimals. 6. Questions on the Geography of Europe, and particularly of the British Isles. 7. Questions on the outlines of English History—that is, the succession of the Sovereigns and the leading events of each reign. 8. Mathematics:—Euclid, Books I. and II., or the subjects thereof; Algebra to Simple Equations, inclusive. 9. Translation of a passage from the second book of Cæsar's Commentaries, "De Bello Gallico." Part (2.) Optional subjects:—Papers will also be set on the following six subjects, and each candidate will be required to offer himself for examination on one subject at least, at his option; but no candidate will be allowed to offer himself for examination on more than four subjects:— 1. Translation of a passage from the First Book of the Anabasis of Xenophon. 2. Translation of a passage from X. B. Saintine's "Picciola." 3. Translation of a passage from Schiller's "Wilhelm Tell." Besides these translations into English, the candidate will be required to answer questions on the grammar of each subject, whether compulsory or optional. 4. Mechanics. The questions will be chiefly of an elementary character. 5. Chemistry. The questions will be on the elementary facts of Chemistry. 6. Botany and Zoology. The question will be on the classification of Plants and Animals. The quality of the handwriting and the spelling will be taken into account. Certain certificates, as for instance, that of the Middle Class Examinations (Senior), are accepted in lieu of this examination, provided such include Latin and Mathematics. The Professional Education must comprise four years of study subsequent to the preliminary examination, and include certain attendances at lectures and hospital practice. The fee is 22*l*., besides 2*l*. for the Preliminary examination. For Fellowship the curriculum is longer, the examinations more severe, and the fees higher. Or a member of eight years' standing may offer himself for the final examination for the Fellowship. The Royal College of Surgeons also grants certificates of qualification in midwifery and in dental surgery.

The Royal College of Physicians, Edinburgh, grants licenses in medicine. The fee here is ten guineas. The curriculum is very similar to that which has been described. Any licentiate of a College of Physicians, or graduate of a British or Irish University, with whose knowledge of medical and general science the College may be satisfied, may be admitted a member of the College, provided he shall have attained the age of twenty-four years. The fee to be paid by a member is 31*l*. 10*s*. When a licentiate is raised to the rank of member he pays 21*l*. When a member is raised to the rank of fellow the fee is 31*l*. 10*s*., exclusive of stamp-duty, which amounts to 25*l*.

The Royal College of Surgeons, Edinburgh, also grants diplomas of membership. The fee here for the professional examination amounts to 10*l*.

The Royal College of Physicians of Edinburgh, and the **Royal College of Surgeons of Edinburgh,** while they still continue to give their diplomas separately, under separate regulations, have made arrangements by which, after one series of examinations, the student may obtain the diplomas of both colleges. The general principle of this joint examination is, that it shall be conducted by a board in which each body is represented in those branches which are common to both medicine and surgery; but that the College of Physicians shall take exclusive charge of the examination in medicine, and the College of Surgeons of the examination in surgery. The object of the joint examination is, to give to students facilities for obtaining from two separate bodies, and at less expense, a qualification in medicine and a qualification in surgery. Students passing that examination successfully will be enabled to register two qualifications under the Medical Act—Licentiate of the Royal College of Physicians of Edinburgh and Licentiate of the Royal College of Surgeons of Edinburgh.

The Faculty of Physicians and Surgeons of Glasgow also grant a diploma. The candidates follow a curriculum similar to that of the Edinburgh College of Surgeons. The fee for the preliminary examination is 10*s*., and for the professional examinations 10*l*. In connection with the Royal College of Physicians of Edinburgh a double diploma is also granted. The fee for this, as for the similar double diploma in Edinburgh (professional examinations only), is 16*l*.

The King and Queen's College of Physicians in Ireland grants a license in medicine, and also a license in midwifery. A four-year's course of medical study is required, and a special additional examination for the midwifery qualification. The fee for the license in medicine, 15 guineas; for the midwifery diploma, 3 guineas; or, if both are taken out together, 16*l*.

The Royal College of Surgeons in Ireland grants *Letters Testimonial* and Fellowship. For the former a preliminary examination and the usual medical course is required, the total of the fees being 26*l*. 15*s*. For Fellowship the B.A. or an equivalent examination is demanded as preliminary, and a longer course of study. The fee is 47*l*. 5*s*. if the candidate intends to practise within ten miles of Dublin, or 36*l*. 15*s*. otherwise.

The Society of Apothecaries, London, grants a certificate of qualification to practise as an Apothecary, and requires that the candidate shall produce testimonials of having passed a Preliminary Examination in Arts, as a test of general education. Of having served an apprenticeship or pupilage of not less than five years to a practitioner qualified by the Act of 1815. This period may include the time spent in attending lectures and hospital practice. Of having attained the full age of twenty-one years. Of good moral conduct. And of having pursued a course of medical study in conformity with the regulations of the Court. The course of study includes three winter sessions and two summer sessions. The extent of the examinations is modified towards gentlemen holding the diplomas of other examining bodies. The Society also grants a certificate of qualification to act as an assistant, the examination comprising the following subjects:—In translating physicians' prescriptions in the British Pharmacopœia; in Pharmacy, Pharmaceutical Chemistry, and Materia Medica. *Fees.*—For a certificate of qualification to practise, six guineas, the half to be paid at the first examination; for an assistant's certificate, two guineas.

The Apothecaries' Hall of Ireland. *Professional Education and Examination.*—Every candidate for the license to practise must produce certificates to the following effect:— 1. Of having passed an examination in Arts, previously to entering on professional study. 2. Of being registered as a Student in Medicine. 3. Of being at least twenty-one years of age, and of good moral character. 4. Of apprenticeship to a qualified apothecary, or of having been engaged in Practical Pharmacy with an apothecary for three years subsequently to having passed the examination in Arts. 5. Of having spent four years in professional study. 6. Of having attended the following courses—viz., Chemistry, during one winter session; Anatomy and Physiology, during two winter sessions; Demonstrations and Dissections, during two winter sessions; Botany and Natural History, during one summer session; Practical Pharmacy and Practical Chemistry (in a recognised laboratory), each during three months; Principles and Practice of Medicine and Therapeutics, during one winter session; Midwifery and Diseases of Women and Children, during six months; Practical Midwifery at a recognised hospital (attendance upon twenty cases); Surgery, during one winter session; Medical Jurisprudence, during one summer session; instruction in the practice of Vaccination. 7. Of having attended at a recognised hospital or hospitals the Practice of Medicine and Clinical Lectures on Medicine, during two winter and two summer sessions; also the Practice of Surgery and Clinical Lectures on Surgery during one winter and one summer session. The examinations are divided into two parts, the first part comprehending Chemistry, Botany, Anatomy, Physiology, and Pharmacy; the second, Medicine, Therapeutics, Surgery, Pathology, Midwifery, Forensic Medicine, and Hygiene.

Candidates for the certificate of Assistant to an Apothecary in Ireland, in compounding and dispensing medicine, are examined in the British Pharmacopœia and in Pharmacy scientific and practical, including the history, characters and qualities of medicines, with their preparations and doses, and in the translation of Latin prescriptions. Neithe the Arts' certificate nor the certificate of Apprentice is required for the examination of Assistant.

DENTAL DIPLOMAS.

The Royal College of Surgeons grants a diploma in denta surgery (L.D.S.), which may be taken apart from the Diploma of Member of the College of Surgeons. The preliminary ex amination is not stipulated for, but candidates must produc Certificates:—

1. Of being twenty-one years of age.
2. Of having been engaged during four years in the acquirement of professional knowledge.
3. Of having attended, at a School or Schools recognised b this College, not less than one of each of the followin Courses of Lectures, delivered by Lecturers recognised b this College, namely:—Anatomy, Physiology, Surgery Medicine, Chemistry, and Materia Medica.
4. Of having attended a second Winter Course of Lectures o Anatomy, or a course of not less than twenty Lecture on the anatomy of the Head and Neck, delivered b Lecturers recognised by this College.
5. Of having performed Dissections at a recognised Schoo during not less than nine months.

6. Of having completed a course of Chemical Manipulation, under the superintendence of a Teacher or Lecturer recognised by this College.
7. Of having attended at a recognised Hospital or Hospitals in the United Kingdom the Practice of Surgery and Clinical Lectures on Surgery during two Winter Sessions.
8. Of having attended at a recognised School two Courses of Lectures upon each of the following subjects, viz.:—Dental Anatomy and Physiology (Human Comparative), Dental Surgery, Dental Mechanics, and one Course of Lectures on Metallurgy, by Lecturers recognised by this College.
9. Of having been engaged, during a period of not less than three years, in acquiring a practical familiarity with the details of Mechanical Dentistry, under the instruction of a competent Practitioner.
10. Of having attended at a recognised Dental Hospital, or in the Dental department of a recognised general Hospital, the practice of Dental Surgery during the period of two years.

N.B.—The Students of the London Schools are required to register the above Certificates at this College; and special Returns will be required from the Provincial Schools.

Examination. — The examination is partly written and partly oral.

The written examination comprises General Anatomy and Physiology, and General Pathology and Surgery, with especial reference to the practice of the Dental profession.

The oral practical examination comprises the several subjects included in the curriculum of professional education, and is conducted by the use of preparations, casts, drawings, &c.

Members of the College, in the written examination, will only have to answer those questions set by the Section of the Board, consisting of persons skilled in Dental Surgery; and in the oral examination will be examined only by that Section.

A candidate whose qualifications shall be found insufficient will be referred back to his studies, and will not be admitted to re-examination within the period of six months, unless the Board shall otherwise determine.

Examinations will be held in January and June.

The fee for the Diploma is ten guineas, over and above any stamp duty.

MEDICAL EDUCATION.

After passing his Preliminary Examination at the College of Surgeons, or the Apothecaries Hall, or producing a certificate of having passed the Oxford, Cambridge, or Durham middle class examinations (senior) if Latin and mathematics have been included, or producing certificates of other examinations recognised by the Medical Council, the student is at liberty to register. He must then pass four years in professional study. Of these four years it is required by the College of Physicians, and College of Surgeons, that at least two and a-half years should have been passed at a hospital medical school. Of course the whole of the four years may have been so occupied, or the other eighteen months may be passed with a qualified medical practitioner, who, holding one or more public appointments, can afford him "such opportunities of practical instruction as shall be satisfactory" to the various examining boards. Most of the hospital medical schools have also scholarships attached, which are open for competition among students.

We give below the aggregate fees charged for the courses required by the College of Surgeons and Apothecaries' Hall and the lecture staff of a few of the medical schools of this country. Fuller details will in many cases be found among our advertisements, or may be obtained from the secretaries.

Charing Cross Hospital Medical School.—The session will commence on Thursday, October 1, when the introductory address will be delivered by Dr. Douglas Powell, at 4 o'clock. Aggregate fee, 76*l.* 5*s.* Winter Session.—Anatomy: Mr. Bellamy, F.R.C.S.—Physiology: Dr. Silver, M.A.—Medicine: Dr. Pollock, F.R.C.P.—Surgery: Mr. Canton, F.R.C.S.—Chemistry: Mr. Heaton, F.C.S.—Dissections: Dr. Cantlie, M.A. Summer Session.—Materia Medica: Dr. Powell, F.R.C.P.—Midwifery: Dr. Black, M.A.—Forensic Medicine: Dr. Poore.—Pathology: Dr. Green.—Botany: Dr. Dowson.—Practical Chemistry: Mr. Heaton.

King's College, London (Medical Department).—Aggregate fee, 100*l.* Introductory lecture on Thursday, October 1, at 4 p.m., by Professor David Ferrier, M.A., M.D.—Anatomy, Descriptive and Surgical: Professor John Curnow, M.D.—Physiology and Practical Physiology: Professor William Rutherford, M.D., F.R.S.E.—Chemistry and Practical Chemistry Professor C. L. Bloxam, F.C.S.; Demonstrator, W. N. Hartley, F.C.S.; and Assistant Demonstrator, J. M. Thomson, F.C.S.—Medicine, Principles and Practice of:—Professor George Johnson, M.D., F.R.S.—Surgery, Principles and Practice of: Professor John Wood, F.R.S.—Clinical Surgery: Professor Sir William Fergusson, Bart., F.R.S.—Hygiene: Professor W. A. Guy, M.B., F.R.S.—Botany: Professor Robert Bentley, F.L.S.—Materia Medica and Therapeutics: Professor E. B. Baxter, M.D.—Obstetric Medicine and the Diseases of Women and Children: Professor W. Playfair, M.D.—Forensic Medicine: Professor D. Ferrier, M.A., M.D.—Comparative Anatomy: Professor A. H. Garrod, B.A.—Pathological Anatomy: Professor L. S. Beale, M.B., F.R.S.—Dental Surgery: Professor Samuel Cartwright, F.R.C.S.—Ophthalmology: Professor J. Soelberg Wells, M.D., F.R.C.S.—Psychological Medicine: Professor Edgar Sheppard, M.D.—Dean of the Faculty: Professor Bentley, F.L.S.

The London Hospital Medical School.—The session will commence on October 1, when an address will be delivered by Dr. Fenwick. Aggregate fee, 94*l.* 10*s.* Lecturers, Mr. J. Luke, F.R.S., Mr. John Adams, Mr. Curling, F.R.S., Dr. Herbert Davies, Dr. Andrew Clark, Dr. Ramskill, Dr. Langdon Down, Dr. Hughlings-Jackson, Dr. Sutton, Dr. Fenwick, Dr. Woodman, Dr. Stephen Mackenzie, Dr. A. E. Sansom, Mr. Jonathan Hutchinson, Mr. Maunder, Mr. Couper, Mr Walter Rivington, Mr. Jas. Adams, Mr. Warren Tay, Mr. McCarthy, Mr. Reeves, Dr. Head, Dr. Palfrey, Mr H. J. Barrett, Mr. A. W. Barrett, Dr. Letheby, Dr. Meymott Tidy, Dr. Prosser James, Dr. Morell-Mackenzie, Mr. J. E. D. Rodgers, Mr. Gilbert Baker.

St. Mary's Hospital Medical School.—The introductory lecture by Mr. Edmund Owen, Thursday, October 1, 1874, at 3.30 p.m. Aggregate fee, 84*l.* Medical Officers and Lecturers.—Consulting Officers: Dr. Chambers, Sir James Alderson, M.D., F.R.S., Dr. Sibson, F.R.S., Mr. Coulson, Mr. Lane, and Mr. White Cooper.—Physicians: Dr. H. Jones, F.R.S., Dr. Sieveking, and Dr. Broadbent.—Assistant Physicians: Dr. Cheadle, Dr. Lawson, and Dr. Shepherd.—Surgeons: Mr. Spencer Smith, Mr. Haynes Walton, and Mr. J. R. Lane.—Assistant Surgeons: Mr. Gascoyen, Mr. Norton, and Mr. Edmund Owen.—Physician-Accoucheur: Dr. Alfred Meadows.—Assistant Physician-Accoucheur: Dr. Wiltshire. Surgeon in charge of the Ophthalmic Department: Mr. Haynes Walton.—Aural Surgeon: Mr. G. Field. Surgeon-Dentist: Mr. Howard Hayward. Medical Tutor: Mr. S. J. Knott.—Other Lecturers: Dr. Wright, Dr. Randall, Mr. Mivart, F.R.S., Dr. Trimon, and Dr. Farquharson.

St. Thomas's Hospital.—The session will commence on Thursday, October 1, 1874, when an address will be delivered by Mr. MacCormac, at 2 o'clock. Aggregate fee, 105*l.* Lecturers: —Medicine: Dr. Peacock and Dr. Murchison.—Surgery: Mr. Sydney Jones and Mr. MacCormac.—General Pathology: Dr. Bristowe.—Physiology and Practical Physiology: Dr. Ord and Dr. John Harley.—Descriptive Anatomy: Mr. Francis Mason and Mr. W. W. Wagstaffe.—Anatomy in the Dissecting Room: Anatomical Lecturers, Mr. Rainey and Dr. R. W. Reid.—Practical and Manipulative Surgery: Mr. Croft.—Chemistry and Practical Chemistry: Dr. A. J. Bernays.—Midwifery: Dr. Barnes.—Physics and Natural Philosophy: Dr. Stone.—Materia Medica: Dr. Payne.—Forensic Medicine and Hygiene: Dr. Stone and Dr. Gervis.—Comparative Anatomy: Mr. C. Stewart.—Opthalmic Surgery: Mr. Liebreich.—Botany: Mr. A. W. Bennett.—Dental Surgery: Mr. J. W. Elliott.—Demonstrations: Morbid Anatomy: Dr. Payne.—Morbid Anatomy and Practical Pathology: Mr. H. Arnott.—Mental Diseases: Dr. Wm. Rhys Williams. T. B. Peacock, M.D., Dean; R. G. Whitfield, Medical Secretary. Any further information required will be afforded by Mr. Whitfield.

Birmingham, General, and Queen's Hospitals, Amalgamated.—The introductory Clinical address will be delivered on Wednesday, October 7, 1874, by Mr. Wilders, at the Queen's Hospital, at 3.30 p.m. Aggregate fee, 31*l.* 10*s.* Staff:—The General Hospital.—Consulting Surgeon: D. W. Crompton, F.R.C.—Physicians: Dr. Fletcher, Dr. Russell, Dr. Wade, Dr. Foster, and Dr. Rickards.—Surgeons: Mr. Baker, Mr. Pemberton, Mr. Bartleet, Mr. Goodall, and Mr. Jolly. The Queen's Hospital.—Consulting Physician: Alexander Fleming, M.D.—Consulting Surgeon: W. Sands Cox, F.R.S.—Consulting Obstetric Surgeon: Samuel Berry, F.R.C.S. Physicians: Dr. Heslop, Dr. Johnston, Dr. Sawyer, and Dr. Mackey.—Surgeons: Mr. West, Mr. Gamgee, Mr. Furneaux Jordan, and Mr. Wilders. —Obstetric Surgeon: Mr. John Clay.—Acting Opthalmic Surgeon: Mr. Priestley Smith. Pathologist: Mr. Thomas.—Dental Surgeon: Mr. C. Sims.

Bristol School of Medicine.—The session will commence October 1. Aggregate fee, 55 guineas. Courses of Lectures. Winter Session. Medicine: Samuel Martyn, M.D., F.R.C.P., and William H. Spencer, M.B. Principles of Surgery and Practical Surgery: Robert W. Coe, F.R.C.S., and Robert W. Tibbits, M.B., M.R.C.S. Descriptive and Surgical Anatomy: Edmund C. Board, L.R.C.P., M.R.C.S., and Nelson C. Dobson, F.R.C.S. Superintendence of Dissections: Henry M. Chute, L.R.C.P.Ed., M.R.C.S., A. E. Aust Lawrence, M.B., C.M., and Henry Waldo, M.B. Physiology and Practical Physiology: George F. Atchley, M.B., M.R.C.S., and R. Shingleton Smith, M.D.—Chemistry: Thomas Coomber, F.C.S.—Summer Session. Midwifery and Diseases of Women: Joseph G. Swayne, M.D.—Medical Jurisprudence: William P. Keall, L.R.C.P.Ed., M.R.C.S.—Materia Medica and Therapeutics: George F. Burder, M.D., M.R.C.P.—Botany: Mr. Adolph Leipner.—Pathological Anatomy: Samuel Martyn, M.D., F.R.C.P., and William H. Spencer, M.B.—Practical Chemistry: Thomas Coomber, F.C.S.—Comparative Anatomy: George F. Atchley, M.B., M.R.C.S.

Leeds School of Medicine.—The session will commence on Thursday, October 1. The introductory address will be delivered by C. G. Wheelhouse, Esq., F.R.C.S., at 4 o'clock. Aggregate fee 44 guineas. Lectures.—Descriptive Anatomy: Robert T. Land, M.D., M.R.C.S., John A. Nunneley, M.B., M.R.C.S., and Edmund Robinson, M.R.C.S.—General Anatomy and Physiology: C. J. Wright, M.R.C.S., and John Horsfall, M.A., F.R.C.S.—Practical Physiology: James Walker, M.R.C.S., L.R.C.P.—Medicine: John D. Heaton, M.D., F.R.C.P., and T. C. Allbutt, M.A., M.D., F.L.S.—Pathology: R. P. Oglesby, M.R.C.S.—Surgery (including the practical course): Claudius G. Wheelhouse, F.R.C.S., T. Pridgin Teale, M.A., F.R.C.S., and T. R. Jessop, F.R.C.S. Mental Diseases: J. Crichton Browne, M.D., F.R.S.E.—Chemistry: Thomas Fairley, F.C.S. Materia Medica: John Edwin Eddison, M.D.—Midwifery: W. Hall, M.R.C.S.—Forensic Medicine: Thomas Scattergood, M.R.C.S. —Botany: Edward Atkinson, M.R.C.S., F.L.S.—Comparative Anatomy: T. C. Allbutt, M.A., M.D., F.L.S., and Edward Atkinson, M.R.C.S., F.L.S.—Demonstrations of Anatomy: R. P. Oglesby, M.R.C.S., Edmund Robinson, M.R.C.S., and A. F. McGill, M.R.C.S.

Owen's College (Manchester Royal) School of Medicine. —The new buildings will be opened by Professor T. H. Huxley, F.R.S., on Friday, October 2, 1874, at 3 P.M. Aggregate fee, 48*l.*, and Medical Tutor's fee 2 guineas annually. Director of Medical Studies: Professor Southam, F.R.C.S.—Professors and Lecturers: Winter session: General Anatomy and Physiology: Professor William Smith, F.R.C.S.—Practical Physiology and Histology: Professor Arthur Gamgee, M.D., F.R.S. Anatomy, Descriptive and Practical: Professor Morrison Watson, M.D., and J. B. Perrin, M.R.C.S., F.L.S., F.K.C., London (Demonstrator).—Comparative Anatomy: Professor W. C. Williamson, F.R.S.—Chemistry: Professor Henry E. Roscoe, B.A., Ph.D., F.R.S.—Organic Chemistry: Professor C. Schorlemmer, F.R.S. Principles and Practice of Medicine: Professor William Roberts, M.D., F.R.C.P., and Professor J. E. Morgan, M.D., M.A. (Oxon), F.R.C.P. Principles and Practice of Surgery: Professor George Southam, F.R.C.S., and Professor Edward Lund, F.R.C.S.—Clinical Medicine: the Physicians to the Royal Infirmary.—Clinical Surgery: the Surgeons to the 'Royal Infirmary. Summer session: General Pathology and Morbid Anatomy: Henry Simpson, M.D. (Lond.), and Julius Dreschfeld, M.D. Midwifery and Diseases of Women and Children: John Thorburn, M.D. Materia Medica and Therapeutics: Alexander Somers, M.R.C.S., and Daniel John Leech, M.B. (Lond.) Forensic Medicine: G. Morley Harrison, M.C.R.S. Opthalmology: Thomas Windsor, M.R.C.S. Practical Chemistry: Professor Henry E. Roscoe, F.R.S. Botany: Professor W. C. Williamson, F.R.S. Hygiene and Public Health: Arthur Ransome, M.D., M.A. (Cantab.). Medical Tutor: J. Beswick Perrin, M.R.C.S., F.L.S. Registrar: J. Holme Nicholson.

University of Durham College of Medicine.—Newcastle-upon-Tyne.—The Session will commence on Thursday, October 1. The Inaugural Address will be delivered by J. Russell, M.R.C.S. Composition Fee, 52*l.* 10*s.* Winter session, commencing October 1, 1874, ending March 31, 1875.—Anatomy: T. C. Nesham, M.D., M.R.C.S.; Luke Armstrong, M.D., M.R.C.S., and J. Russell, M.R.C.S.—Principles and Practice of Medicine: G. H. Philipson, M.A., M.D., F.R.C.P.—Principles and Practice of Surgery: G. Y. Heath, M.D., M.R.C.S.—Principles of Chemistry: A. Freire-Marreco, M.A.—Practical Pharmacy: Barnard S. Proctor. Summer session.—Midwifery and the Diseases of Women and Children: C. Gibson, M.D.—Medical Jurisprudence: Byrom Bramwell, M.B.—Botany and Vegetable Physiology: H. E. Armstrong, M.R.C.S.—Materia Medica and Pharmaceutical Chemistry: W. A. Arnison, M.D., M.R.C.S.—Therapeutics: Thomas Humble, M.D., M.R.C.P.—Pathological Anatomy: C. J. Gibb, M.D., M.R.C.S.—Operative Surgery: G. Y. Heath, M.D., M.R.C.S.—Practical Chemistry: A. Freire-Marreco, M.A. —Psychological Medicine: R. H. B. Wickham, F.R.C.S. (Edin.) —Practical Physiology.—Medical Tutor: J. Reoch, M.A., M.B., M.C.—Tutor in Arts: Rev. J. Bulmer, B.D. At this college there is also a special course for pharmaceutical students. Fee for the whole twelve guineas.

Sheffield School of Medicine.—The winter session will commence on October 1. The introductory address will be delivered by Dr. John Charles Hall, lecturer on medicine, at 4 p.m. Aggregate fee 42*l.* List of Lectures.—Winter session, commencing October 1, 1874.—Anatomy, Descriptive and Surgical: Mr. Skinner, and Mr. E. Skinner.—Demonstrations of Anatomy: Mr. Clarke, Dr. T. H. Morton, and Dr. E. Thomas.—Physiology: Mr. S. Morton, and Dr. O'Keefe.—Principles and Practice of Medicine: Dr. de Bartolome, and Dr. Hall.—Principles and Practice of Surgery: Mr. W. F. Favell, Mr. Parker, F.R.C.S., and Mr. A. Jackson.—Chemistry: Mr. Allen.—Dental Mechanics: Mr. G. Mosely.—Clinical Medicine: Dr. de Bartolome, Dr. Law, and Dr. Frank-Smith.—Clinical Surgery: Mr. Barber, Mr. W. F. Favell, and Mr. Parker, F.R.C.S.—Practical Surgery: The House Surgeon of the Infirmary.—Practical Physiology: Dr. Thomas. List of Lectures.—Summer session, May 1, 1875. —Midwifery and Diseases of Women: Dr. Hime.—Materia Medica and Therapeutics: Dr. Young.—Medical Jurisprudence and Toxicology: Mr. Baker, and Mr. Harrison.—Botany: Mr. Birks.—Practical Chemistry: Mr. Allen.—Dental Surgery: Dr. Merryweather.—Comparative Anatomy: Mr. W. Jackson.—Demonstrations of Pathology and Microscopy: The House Surgeon of the Infirmary.—Demonstrations of Operative Surgery: Mr. Favell, and Mr. Parker, F.R.C.S.

Veterinary Colleges.

The Royal Veterinary College, Camden Town, London. —The Introductory Address will be delivered by Professor Tuson, on October 1, at one o'clock. Students are required to attend one summer and two winter sessions at least before being elegible for examination for the Diploma of the Royal College of Veterinary Surgeons. The Matriculation Examination is conducted by the College of Preceptors. Fee, one guinea. College entrance fee, 25 guineas, the payment of which confers the right of attendance on all the Lectures and Collegiate Instructions, with the exception of Practical Chemistry. The Matriculation Examination of Pupils will take place on September 29, at 10 A.M.

The New Veterinary College, Edinburgh. The session will commence on Wednesday, October 28, at two o'clock P.M., when the Introductory Address will be delivered by Principal Williams. Professors: Veterinary Medicine and Surgery: Professor Williams, F.R.S.E., M.R.C.V.S.—Anatomy: Professor Vaughan, F.L.S., M.R.C.V.S.—Physiology: Professor Young, M.D. Chemistry and Toxicology: Dr. Stevenson Macadam, F.R.S.E. — Materia Medica and Therapeutics: Professor Vaughan. Practical Pharmacy: Mr. Balfour, M.R.C.V.S. — Clinical Medicine and Surgery: The Principal, assisted by Mr. Balfour.

TECHNICAL EDUCATION.

Royal School of Mines, London. Tickets for separate courses of lectures 3*l.* and 4*l.* each. Associates pay a fee of 30*l.* in one sum, or two annual payments of 20*l.* each. The laboratory is not included. Courses: Chemistry: E. Frankland, Ph.D., F.R.S. Metallurgy: John Percy, M.D. F.R.S. Natural History: T. H. Huxley, LL.D., F.R.S.—Mineralogy and Mining: Warington W. Smyth, M.A., F.R.S., Chairman. Geology: A.

C. Ramsay, LL.D., F.R.S.—Applied Mechanics: T. M. Goodeve, M.A.—Physics: Frederick Guthrie, Ph.D., F.R.S.—Mechanical Drawing: Rev. J. H. Edgar, M.A. The session will commence on October 1.

Royal College of Science for Ireland, Dublin.—The fees are 2*l.* for each course, or 10*l.* for the whole for a year (laboratory excluded). Courses: Chemistry (Theoretical and Practical), Metallurgy: Professor Robert Galloway, F.C.S.—Mathematics, Mechanics, and Mechanism: Professor Robert Ball, LL.D., F.R.S.—Drawing, Engineering, and Surveying: Professor Thomas F. Pigot, C.E., M.R.I.A.—Experimental Physics: Professor W. F. Barrett, F.R.S.E., F.C.S.—Geology: Professor Edward Hull, M.A., F.R.S.—Mining and Mineralogy: Professor J. P. O'Reilly, C.E., M.R.I.A.—Agriculture: Professor Edmund W. Davy, M.D., M.R.I.A.—Botany: Professor W. R. McNab, M.D. Zoology: Professor H. Alleyne Nicholson, M.D. The session commences on Monday, October 5.

The Hereford Proprietary School specially adapts its teaching to pupils intended for the pharmaceutical profession, as the course includes laboratory practice and the study of botanic and Materia Medica collections.

CHEMICAL INSTRUCTION IN GERMANY.

Laboratory instruction is provided by Government in all the German universities and is very cheap. The student only pays an entrance fee for a *semester* or season, amounting to between 3*l.* or 4*l.*, or less if he only works for half days. At many of the German universities also there are courses of lectures on pharmacy. At Berlin the winter session commences in the last week of October, and continues until March 15. The summer session commences in the last week of April, and continues to August 15. Experimental exercises both during the winter and summer sessions are conducted from 9 to 5 o'clock daily, except on Saturdays, when the laboratory is closed at 2 p.m. Lectures are delivered during the winter session on Inorganic Chemistry (5 lectures a week), fee, 34*s.*; during the summer session on Organic Chemistry (5 lectures a week), fee, 34*s.*

At Dr. Fresenius' chemical laboratory at Wiesbaden there are similarly two *semesters* a year, the winter *semester* commencing on October 15 and ending on March 15; that of the summer commences on April 24 and ends August 24. Students can enter for two, three, four, or six days weekly, and for half or full days. The full charge for a *semester* (whole days and six days a week) is about 8*l.* 10*s.*; for less time proportionately less charges. Dr. Fresenius also provides complete courses of lectures especially for pharmaceutical students by himself, Dr. Henry Fresenius, Dr. Neubauer, Dr. Kirschbaum, &c. He also undertakes to arrange for board and residence in the town with respectable families.

ON THE USE OF PHOSPHORUS IN MEDICINE.

By Huskisson Adrian, F.C.S.

Second Paper.

Unlike several of the preparations of the Pharmacopœia Appendix, the hypophosphites of lime and soda do not need an elaborate explanation of their introduction and a defence of their utility; but, on the other hand, some pharmacists may think that it should be explained why such valuable and well-known medicines have not been made official before. As far back as 1860 Dr. Miller was able to speak of the hypophosphite of soda as being made largely for medicinal purposes, but it is not until fourteen years afterwards that it is introduced into the Pharmacopœia, by which time a number of other salts of hypophosphorous acid have also come into use. Of these the most important are those of ammonia, iron, manganese, potash, and quinine; they are usually administered in syrup on account of their nauseous taste. Some care is needed in dealing with the hypophosphites, as even now the readiness with which they part with their phosphorus does not seem to be fully understood. A short time ago I was shown a prescription in which the hypophosphite of soda was ordered in conjunction with chlorate of potash. It is not for me to say what effect the physician expected to derive from this combination, but I presume he did not intend his druggist to rub the two salts together in a mortar. This, however, was done, and the worthy dispenser appears to have been quite unprepared for the resulting explosion.

Seeing that in the employment of the hypophosphites the phosphorus is the ingredient desired to be brought into action, it may be asked why hypophosphorous acid is not used, *per se*, instead of its salts. I have swallowed it in small doses, and find it gives a feeling of warmth similar to that produced by phosphorus itself; and a physician who was good enough to try it for me reports that, given in doses of one-fiftieth of a grain, gradually increased, it acts in the same way as the metalloid.

Should this be borne out by the experience of other medical men, doubtless this acid will be found a valuable remedy, being free, on the one hand, from the unpleasant taste of the hypophosphites, and on the other hand not causing the eructation which has been invariably consequent upon the use of phosphorus itself. It must, however, be mentioned that the acid is sold in solutions of various strength, so that the same prescription will give different results, according to the acid used by the dispenser. This may be avoided if chemists will make their own solution of definite strength as required, by decomposing a solution of *Calcis hypophosphis* with oxalic or sulphuric acid, and filtering off the insoluble calcium salt. Eighty-five grains of the dry hypophosphite will yield an amount of acid containing thirty-one grains of phosphorus. If time permit, it is better to let the acid stand several hours after preparation, to throw down traces of lime not removed by filtration.

Phosphide of zinc is an American remedy lately introduced here, and is administered in pills, the dose being from half a grain upwards. Great difference of opinion exists as to its efficacy, and one intelligent critic went so far as to pronounce that it contained no phosphorus at all! At first sight it certainly does bear a suspicious resemblance to powdered zinc; but if a small quantity be placed on the tongue the characteristic taste of phosphorus is immediately apparent. When phosphide of zinc is digested in cold water slightly acidulated with hydrochloric acid phosphide of hydrogen is evolved at a rate which fully accounts for the powerful therapeutic effects claimed for this salt by those who are favourable to its use.

Chlorophosphide of arsenic is a compound for which medical science is indebted to Dr. Routh. It seems that he observed that phosphorus and arsenic were efficacious in similar diseases, and thought it might be useful to employ the two elements in combination. The phosphide of arsenic he found to be insoluble, and totally unfit for his purpose; but on mentioning his difficulty to the chemist from whom he usually procured his phosphorus preparations, that gentleman furnished him with a solution which he has found of great service. The chemist in question, Mr. King, has published his formula for preparing the chlorophosphide of arsenic; but like the celebrated formula for James' fever powder, it only gives good results in the hands of the proprietor. However, there is no doubt that phosphorus and arsenic are really present in this compound in conjunction with hydrochloric acid; though my experiments lead me to think that Dr. Routh has overstated the amount of the former element present. This remedy is prescribed for ague, neuralgia, and liver complaints; and (supposing the theory of some eminent physicians to be correct, that asthma is closely connected with certain skin diseases) it is possible that the chlorophosphide may be found of great service here also.

Phosphoric acid and its salts have been so fully treated of by other writers that I need not occupy the attention of the readers of this journal with any remarks upon this branch of the subject; but before concluding this paper perhaps I may be allowed to offer a necessary caution. When hydrate of chloral was first introduced here it took the fancy of the public wonderfully, and was used to such an unwise extent that it was not until several deaths had taken place that this salt was allowed to assume its true position as a powerful remedy, only to be employed under strict medical supervision. There seems some fear of the same thing happening with phosphorus, whose effects some suppose to accumulate in the system, and a comparatively small dose of which is an active poison, causing priapism and even death. Now the benefits derived from a proper use of this medicine are so apparent and pleasant that the public are beginning to prescribe it for themselves with an avidity which Dr. Routh has not hesitated to compare with dram-drinking; and it, therefore, becomes the duty of chemists to warn their customers that any such proceeding is exceedingly dangerous, and that phosphorus is a substance which must not be played with, or administered without the sanction of a physician. In cases of poisoning by phosphorus the antidote is an emetic, followed by a draught of milk containing from 10 to 15 drops of turpentine, which substance probably owes its efficacy to a property mentioned in my former paper.

LAVENDER.

THERE is one portion of the county of Surrey which, at the present season of the year, just when the corn fields are rich with a bounteous harvest, will amply repay a day's ramble. Those who are accustomed to foot it know full well the advantages possessed by the pedestrian, who can traverse the byways, along shady fences, and obtain pleasant peeps of scenery from spots that are passed unknown, as being removed from the dusty roads whereon the regular stream of traffic flows. To such, if they are not already acquainted with the locality, we would commend the neighbourhood of Croydon, from whence the line of the Brighton Railway will take them through the centre of the lavender fields that lie on the right hand and on the left, from the village of Waddon to the growing town of Sutton. If we dismiss from our minds impressions created by the snow-clad Alpine peaks, where Europe holds its holiday, or the flowing Rhine and the still broader Danube, and bring ourselves down to homely things, we can scarcely imagine a more charming sight than the landscape here presents. The bright yellow of the corn fields stands out in bold contrast with the broad masses of lavender that send up a reflection to the skies above and diffuse through the air a delicious perfume: the distinctive layers of the darker peppermint are cut out in sharp outlines, and change their hues with the passing cloud.

Those who are engaged in the harvesting of the lavender have verily a pleasant occupation, and they seem, too, to appreciate the bright side of their calling, for they wax eloquent when questioned about this speciality in husbandry. Why this crop is not more extensively cultivated we are at a loss to determine, since the scientific perfumers, for such there are, who prepare for us the delicious perfumes are ransacking every known part of the habitable globe to procure the material wherewith to indulge the fancies created by wealth and luxury. In their nomenclature the lavender holds a place that can never be supplanted, for the experience of modern times and the halo of antiquity rest alike upon the flower, which authorities in such matters tell us is "the foundation of all scents." Since our interests have been excited in what we see around, we are tempted to search back, and we find that our early and observant naturalist instructor, Pliny, whose teachings we had forsooth forgotten, describes the lavender plant under the name of Nardus. The blossom he notices as forming a spike, and there was at that time a spurious kind of nard often sold for spikenard. In the same chapter he states that the most costly and precious ointment was made from the aromatic leaves of the nardus, and the spikes sold for 100 Roman denarii a pound. The most odoriferous grew about the city of Eporrhedia, and was so much esteemed at the time when our Saviour was upon earth that it was sought after with the greatest avidity, and brought a revenue to that city equal to a mine of the most precious metals. The poet Virgil, too, who had a keen appreciation of the useful in Nature, has not omitted to recommend lavender, with savory, as fitted to serve some useful rural purpose in connection with bees, to be planted in the locality of their hives. He says:—

> The verdant lavender must there abound,
> There savory spreads its pleasant scent around.

The Romans, in the midst of the barbarous rites of the amphitheatre, between the acts were accustomed to diffuse a scent of lavender. The flowers and leaves were employed also to scent the water in their great public baths; hence the generic name of the plant, *Lavandula*. So that we are not without precedents of the very highest order to dignify the profession of the lavender grower.

The climate of England appears to be better adapted for the perfect development of this fine old favourite perfume than any other in the globe. Very large quantities are grown at the mouths of the Rhone and the Saône, and also in Portugal, upon the plains of Estremadura. What is called the Alpine lavender of France is remarkably good. Lavender is to be found also in parts of Austria and Hungary, but the fine odour of the British realises in the market four times the price of that of continental growth. It is upon record that lavender first made its appearance in England in 1568, but it is probable that the cultivation had commenced in the monastic gardens at a much earlier period. Six varieties were to be found as early as the reign of Elizabeth: one of these, the cut-leaved (*multifida*), was called Cassidonia, which seems to be derived from the *Casiæ* of Virgil. It does not appear that the English people were, however, accustomed to indulge in the use of perfumes in the time of Henry VIII., or in the reign of Elizabeth, but the medical practitioners of those days recommended persons who were afflicted with the palsy or apoplexy to wash themselves with lavender water or anoint their limbs with the oil made from its flowers; but they, at the same time, condemned the practice of unskilful apothecaries and foolish women who prescribed this and other hot compositions inwardly for all constitutions and for all diseases. At Mitcham, where, according to the biographer of Dr. Donne, one of Isaac Walton's worthies, "there was good air and choice company," the cultivation commenced about a century ago. Lysou, an author who wrote an account of the environs of London in 1796, says that forty years before his time there were only a few acres employed in the growing of medicinal herbs in this parish, whereas at the time when he wrote about 250 acres—of which 100 acres were devoted to the peppermint—were occupied by the physic gardens. The cultivation of lavender, mint, rhubarb, poppy, liquorice, &c., has continued to the present day; but, if we may judge from the appearance of the lavender plants that we passed, the soil has become impoverished and worked out for the want of good management, and much better fields may be met with in other directions, although of more recent introduction. Upon the Mitcham Common, Messrs. Piesse & Lubin, the celebrated perfumers of Bond Street, have a distillery, with flower and herb gardens surrounding, and following the road to the picturesque village of Beddington, and thence to Wallington, the head quarters of the lavender growing and distillation business are reached. By continuing again the walk through Carshalton to Sutton, and across the railway to the high grounds near Banstead Downs, a magnificent panoramic view of the country may be obtained, and many acres of lavender and peppermint can be seen immediately around, or discerned in the distance by the aid of a field glass.

The present season, which has dealt so bountifully with the cereals, has not been equally propitious for the growing of the lavender, and until the recent heavy and continuous rains, which have effected a marvellous transformation, the prospects were exceedingly bad. In fact, the prevalent notion was that there would be "no lavender this year." The last year's growing, being the younger plants, has, however, suffered considerably, and in certain spots in the two and three years' growths, which have hitherto presented an unbroken expanse of colour, the destruction is very apparent. There is a disease which it appears is not uncommon, but which presents very singular features. It occurs chiefly in the middle of the plantations, and results from the aroma of the flowers, which in excess, it appears, has a poisonous influence. The disease is rarely, if ever, met with in gardens where single plants are cultivated, and by thinning out the plants and ensuring a free current of air this influence is prevented or retarded. In Surrey the cultivation has extended itself greatly, and many other similar localities might be found favourable to the culture, where a trial could be made with reasonable chances of a remunerative return. The growing and distilling of herbs is without doubt an agricultural speciality, which has been followed by many persons in this district throughout the lives of themselves and their forefathers, and perhaps the absence of such lengthened and hereditary experience may be the reason why the cultivation has not been more generally attempted. At Hitchin, in Herts, an experiment was made some years ago, and the results have proved most eminently satisfactory. Upon a dry, gravelly, or poor soil, the flowers have a powerful odour, and the severity of our winters has little effect, while in a rich garden soil, although it grows strongly, it is apt to be killed, and the flowers have less perfume. The lavender is planted from cuttings of the old stocks, one, two or three cuttings, according to the discretion of the planter, being placed together in the ground at a distance of eighteen inches apart from each other, and in rows three feet apart, which enables the soil to be kept clear from weeds. The first year produces a small quantity of flowers, which are cut, and the plant is carefully trimmed, so that in the second year it comes to perfection; in the third year it is also good, but after that time it is ploughed up, and the soil is manured and planted again, or there follows an interval of wheat and potatoes. When propagated by seeds, these should be sown in March in a poor light soil, and when the plants are about two inches high they should be transplanted to nursery beds, in which they should remain until the following spring, when they may be planted out for good. The cuttings are struck in the same manner as with all other hardy shrubs, and when rooted should be treated in the same manner as from seedlings. A warm situation, fully exposed to the sun, is the best suited for the lavender, as well as for all other highly aromatic plants. The time selected for harvesting is when the flowers just begin to drop. The oil is contained both in the flowers and in the calyx from which the flower grows, but more largely in the latter. The cutting is done with a hook; the stalks are tied up in mats containing about one hundredweight each, and placed upon carts, and taken to the distillery. The sooner within a few days after cutting the distillation takes place the better, as, if left too long, the flowers lose much of their odour by evaporation. There are two kinds, the *Lavandula vera* and the *Lavandula spica*, and the latter, which has a broad leaf, is the species generally grown.

The distillation is carried on by the principal growers, who distil likewise for the smaller proprietors. The process is a simple one, although it requires knowledge on the part of the men who watch the vats. The capacity of the stills varies from 700 to 1,000 gallons: the lavender is packed in bundles called *mats*—about 1 cwt. each—which are carried to the still house. A thousand-gallon still holds from twenty to twenty-four mats of lavender. The mat or covering is not put into the still with the herb, but the flowers are put there with the stalks, as they are cut from the ground. It takes about two hours to get up the steam; then the finest oil is drawn for two hours and a half: that which follows is the second and third quality. The oil from the stalks is not so volatile, and comes last. The herbs being placed in this large receptacle, the steam which is generated carries the oil and water through a worm pipe which passes round an adjoining tub of water, and then, by the process of cooling, both find their way into a receiver placed at the bottom of the latter tub, where the oil is separated from the water. It requires 70 lbs. of flowers to yield 1 lb. of oil. It is rather lighter than water, pale yellow, very fluid and very fragrant. The stills are cleared by the men with long forks, in the midst of an odour which is very powerful and an escape of steam almost suffocating, when the still is loaded up again, and the process begins afresh. The refuse is thrown out in proximity to the distilleries, and is afterwards returned to the land for manure, as we saw some spread about upon a field at Wallington.

The medicinal properties are well known to the readers of this journal. The lavender is the chief of all the cephalic plants, being very comfortable and reviving under fainting and languishments of the brain and heart, whence its use is good in lethargies, apoplexy, palsy, and epilepsy. It may be safely employed to sweeten the air of sick rooms, when the state of the patient or the atmosphere will not admit of purer circulation. In Provence blotting paper is soaked in the oil, and applied to the heads of children to destroy pediculi, and it is also useful in friction against paralysis. "Sweet odours," says Lord Bacon, "contribute to health by refreshing the spirits and causing cheerfulness," to which *lavender* is pre-eminently conducive, and therefore claims encouragement in our gardens.

AMERICAN QUACKS.

An interesting Paper, read before the Californian Medical Society, by Dr. H. Gibbons, of San Francisco, and reproduced in the Chicago *Pharmacist*, gives some details of the success of certain medical quackeries in the United States, from which we select a few amusing sketches. First, we take the story of

SWAIM'S PANACEA.

The senior members of the profession will recollect a long string of "panaceas," "catholicons," pulmonic balsams, and so forth, commencing with "Swaim's Panacea," about half a century ago. An ignorant bookbinder in New York, who could not even write his name, contracted a disreputable disease, for which he was treated by Dr. Quackenboss, then an old practitioner in that city. He was cured by the aid of a preparation of sarsaparilla, similar to the French *Sirop de Cuisinier*, the formula for which the doctor kindly gave to his patient, that he might save expense by manufacturing it for himself. Swaim removed to Philadelphia, and conceived the idea of turning his personal experience to profit. He made a quantity of the syrup and took it to the Pennsylvania Hospital, and asked permission to give it to some of the patients. The patients appeared to be benefited, and Swaim then requested Professors Chapman and Gibson, visiting physician and surgeon of the hospital, to give him their estimate of it in writing. This they did, thoughtlessly, after being apprised of the ingredients. Shortly afterwards "Swaim's Panacea" came out in the newspapers in flaring capitals, with the certificates of the two distinguished professors, which also headed a large pamphlet filled with certificates of wonderful cures performed by it. At once the nostrum was received into popular favour, and the sales of it soon became enormous. It was even exported in large quantities to the West Indies, South America, and Europe. Swaim, who had learned to write his name in order to affix it to his labels, made a splendid fortune, and built himself a palatial residence on Chestnut Street. Both he and his distinguished endorsers have gone to their long rest—he exultant with triumph, the professors annoyed to the last by chagrin.

When I was a student, and a junior member of the Philadelphia Medical Society, a committee of that Society prepared and published an account of the quack medicines then in vogue. An analysis of "Swaim's Panacea" showed the presence of corrosive sublimate. About the same time a child died soon after taking a dose of "Panacea," apparently from poisoning. It was in evidence that Swaim had been in the practice of obtaining from an apothecary a large number of powders of corrosive sublimate, and the inference was that they were added to the bottles of medicine, and that the child, who had taken the first dose from a bottle, had swallowed the quantity intended for the whole bottle. These things having been made public, Swaim went before a notary and swore that his medicine contained no mercury, and appended the declaration to his labels from that time onward.

DR. JAYNE.

Some thirty years ago there lived in the southern part of New Jersey a mechanic or labouring man, who suffered a long time from chronic diarrhœa. He was cured at last by a prescription obtained from a physician residing, I think, at Port Elizabeth. He removed to Philadelphia, and transformed himself into a doctor more promptly and more economically even than doctors are wont to be made by the bastard manufactory of the man called Dr. Buchanan. And so "Dr. Jayne" and his "Carminative Balsam" had their birth. By the foolishness of advertising, the "Carminative Balsam" became a success. The name of Jayne acquired value as capital in trade, and was used to give currency to vermifuges, expectorants, and other preparations. And thus did the obscure and ignorant farm-hand become a doctor and a millionaire, not so much by his brains as by the accident of a bowel complaint.

THE BONE-SETTER.

The "natural bone-setters" are a curious variety of the human race. They possess by nature the gift of bone-setting, handed down from the seventh son of the seventh son, or some equally valid inheritance. It was my good fortune, just after taking my degree in medicine, to fall in with "Doctor Sweet," the great natural bone-setter of that period, and to enjoy half a day's clinic at his elbow. He had come all the way from Connecticut or New York, at the solicitation of some individuals of easy faith, to manipulate a lot of cripples in my native town; and I was glad of the opportunity to accompany him and witness his performances.

The story was that Sweet, when a boy, developed a remarkable passion for twisting and manipulating the joints of domestic animals, and that he became expert in dislocating and replacing them. All the fowls, cats, dogs, and pigs on his father's farm were the subjects of his daily experimentation—that is to say, of the exercise of his special "gift." With this education and experience he turned his attention to the halt and lame of his own species, just as the Preissnitz innkeeper, a few years later, after long training in the curing of sick horses, transferred his treatment to men, and founded Hydropathy. In every trouble about the joints, Sweet perceived, or imagined, displacement of the bones. His treatment consisted essentially in manipulation, which was sometimes preceded by frictions with a stimulating liniment. He would undertake anything, from a gouty toe to a carious hip; knowing that success in one case out of fifty would establish and sustain his reputation. Here is the difference between the physician and the charlatan—the former being judged by his failures, the latter by his successes.

One of the patients on whom I saw him operate was an Irish gentleman, with sub-acute rheumatism of one arm, every joint from the shoulder to the extremities of the fingers being stiffened and painfully sensitive. He began with the shoulder, twisting and turning the inflamed joint forcibly in all directions, remarking—"I will soon fix it for you."

"Doctor," I enquired, "do you consider that joint dislocated?"

"No, it is shot," was the answer.

"You mean it is out of joint?"

"No, I mean no such thing. It is shot."

"Well, you mean to say the bones are not exactly in place."

"I mean just what I say, the jynt is shot."

And that was the only idea of his pathology that I could gather. From the shoulder he proceeded downwards, using the same forcible movements with each joint. Reaching the fingers, he planted his thumb in the palmar surface of every articulation and bent the joint with violence, the poor patient roaring with agony at each successive operation, and begging piteously that the delicate process be suspended long enough for him to swallow a glass of brandy. It is needless to say that injury, not benefit, followed such treatment.

Sweet was extremely ignorant, and purposely so. He knew that success in a man of no education would dazzle the vulgar; and he knew also that the term vulgar, in that application of it, includes people generally. He intended that his "gift" should sparkle like a diamond in a dung-hill. His pathology was embraced in the one word "shot;" and his therapeutics in the one word "fix." He often fixed a greater number of bones than are counted in osteology. A medical student who was present on the occasion referred to, now Dr. R. R. Porter, of Delaware, asked him if he had ever examined a skeleton. He did not know the meaning of the word, but exclaimed, after a repetition of the enquiry, "Oh! you mean an anatomy. I seen one once, but did not examine it. I had no occasion to do so. I don't want to know anything about the bones. It might interfere with my gift."

DR. YOUNG.

Old Californians will remember "Dr. Young," the pioneer quack of the Pacific Coast. He was an upholsterer and nothing more, until his sudden transformation into a doctor, which required but a single night. He flashed into fame and into business through the institution which graduates nearly all the quacks in the world—the newspaper press.

There was a vein of honesty in Young's character. Realising his own inability to treat disease, he prescribed by proxy. Of this I was first apprised by the following incident:—Being called in consultation in the case of a sick child, late in the evening, it became necessary to appoint an hour for another meeting with the attending physician on the day following. That gentleman was a well-educated medical man, but unfortunately he had been ensnared and shorn of his locks by the Circé of our profession. He could meet me only before eight in the morning, and after six in the evening. I was much surprised by this announcement until he explained the reason. "I am ashamed to own it," said he, "but I am in the service of Dr. Young. I have a family and I could not see them starve. My professional pride is humbled by the position, but the case is one of necessity. Young never prescribes for his patients. He sits at the desk in the reception room and arranges and receives the fees, and then refers them to me, in the private office. I pass for the doctor, and Young for my clerk. He pays me $250 a month, and my time is his exclusively, from eight A.M. till six P.M.

Both these individuals have long since gone to their graves. But "Doctor Young's Institute" still lives, and his name is still employed to attract persons who are fond of certain flavours.

THE TRICKS OF THE TRADE.

Dr. Gibbons' exposure of the arts whereby the worst class of medical quacks ensnare their victims is well worth study. Those arts are not peculiar to America.

In California, as in all other parts of the world, there are "Worm Doctors." Some man of stomach becomes a victim of parasites, and is made acquainted through a medical prescription with the virtues of male fern—the remedy mostly employed by these worm-killers. Forthwith he gathers up all the tape worms and other entozoic prodigies which cats, dogs, and human beings can supply, displays them in his window, and talks and writes tape worm, knowing that a large percentage of men and women who see and read will be converted and will come for his medicines. On this hobby has many a perfect ignoramus crawled into celebrity and affluence.

There is an old story of two fellows who embarked in a speculation in itch-ointment. One of them had the disease, and travelled through the country shaking hands most affectionately with everybody. The other, who had the ointment, followed in a week or two selling the cure. A game something like this belongs to the art of quackery. The first step is to make patients, and this can be done by getting people to read about disease. Pamphlets, almanacs, newspapers distribute the infection. It requires but little knowledge of human nature to discover that reading of diseases causes persons to fancy themselves sick, and sometimes even makes them sick. Medical students are frequently surprised and alarmed, when they begin the study of pathology, to find that they are the victims of the disease under investigation. Even a long course of practice, whilst it fortifies some against morbid mental impressions, renders others sensitive to their own trifling ailments, which their fancy magnifies into dangerous maladies.

The weakest part of a man's body in this respect is the sexual apparatus. It is the easiest thing in the world to convince a man who has ever been diseased in these organs that the disease is still in his system, or to convince him that he is suffering, or will suffer, from indiscretions, however trifling, of his former life. Here are the two cords on which charlatans play with terrific success—private disease and seminal weakness. In this city, as in every large city in the world, there are, at any given time, hundreds, if not thousands, of men who have been startled from their daily labours in the mines and fields and workshops by reading the well-devised sensational advertisements which pollute the columns of almost every newspaper. Gathering up their hard earnings, they hie them away to the city and rush into the trap. Their fears are realised; their apprehensions are promoted, and a cure is guaranteed for a fee in advance. Once in the toils, their course is onward and downward for ever. Without employment, they spend their time travelling to and from the pool of infection; brooding over their thousand sufferings, fancied and real; perusing the poison literature of quackery; giving and receiving increased trouble by comparing notes with the other sufferers like themselves, until, their last dollar and their last hope gone, they lie down to die in a public hospital, or spend their last days in gibbering idiocy.

It is a great mistake to suppose that quackery is a plant that grows only on the miry soil of ignorance. On the contrary, many of the most mendacious and successful quacks are well-educated men and graduates of medical institutions; and many of the best patrons of such impostors belong to the polite circle of society. There is in this respect an attraction of opposites—a sort of polarity, which brings together elements the most antagonistic in their general character. We have seen in this city a semi-barbarian Asiatic, but little above a brute in intellect and knowledge, patronised by the families of intelligent merchants and bankers. And the most adroit and unprincipled charlatan, perhaps, who ever flourished on the Pacific coast was a graduate of London.

It may be said to the credit of American graduates, notwithstanding the low standard of requirements so much complained of, that they seldom lose the sense of professional honour which attaches to their education. They are seldom guilty o high treason to the professional code. Of all the graduates o the California schools, now numbering upwards of one hundred, I do not know of one who has degenerated into an advertising quack. We are indebted to England and Ireland for most of our educated charlatans. Germany furnishes a few only, and a French quack is a rare animal.

"Anatomical Museums," as they are called, are advertisements which conceal their real purpose. A large collection in wax exhibits the effects of disease on the organs of generation in both sexes. There is enough of anatomy and pathology in the collection to impart a scientific flavour to the otherwise corrupting and disgusting exhibition. A lecture is embraced in the programme, and this lecture is cunningly framed for the purpose of seducing credulous and imaginative hearers into the belief that they are diseased, and thus drawing them into the toils.

Several years ago I published in the *Pacific Medical and Surgical Journal* the description of an interview which a gentleman of this city had with the proprietor of the museum, and which I procured from his own lips. It was in substance as follows:—"The patient is scarcely sick—does not know whether he is sick or well—has heard a lecture at the Anatomical Museum, which is part of the plan, and which has started some apprehension in his mind. A fee of five or ten dollars secures a hearing. The urine must be examined while the patient waits. If he be a man of consequence in the community, the 'doctor' puts on large airs and keeps him waiting an hour or two, in the style of the Pontiff and Prince Henry. Finally, the strutting finished and the impatient patient sufficiently impressed with the preliminary demonstrations, the mountebank sits at his side and proceeds solemnly, 'Now, Mr. Shivers, you must control your feelings and remain composed. I don't wish to alarm you, sir, but you are in a bad way. Your urine is full of animalcules. The microscope shows them plainly. Be tranquil, sir; your case is not desperate: but your blood is full of spermatozoa. Let me show you the danger, sir. (Here the artist draws on paper two parallel lines to represent a blood vessel, and pencils a number of eels wriggling along endwise.) Now, sir, as long as the animalcules swim endwise there is no difficulty. They circulate all about the body without injury. But let one of them get crosswise, so. Don't you see the effect?—to obstruct the blood vessel instantly? And then you drop dead, sir! This is one cause of so many sudden deaths. Be calm, sir; I don't wish to alarm you. But if you were to leave my office now, and some one were to come in presently and tell me that a man had fallen dead at the corner of Stockton Street, I should know it was you,' and so forth. 'Well, doctor, can you cure me? and on what terms?' asks Mr. Shivers. 'Certainly, sir, I have two methods. One is the more speedy, but very costly. It requires a medicine which is very expensive. It will cost you 500 dollars. The other is the more common method, and will cost 300 dollars.'" If the patient is sufficiently psychologized he pays down the money, if he has it. But if he begins to argue on finance he is told to take time to consider, and to call again. The chances are largely in favour of his returning. In one instance the intended victim was on his way back with the money in his pocket, when he learned something that awakened his suspicion, and induced him to turn aside for the present and procure an examination of the urine by an honest professional man. The result was that the urine was found to be perfectly normal in every respect. In another instance, a patient having discovered the fraud after paying an enormous fee, demanded that the charlatan should refund it, and enforced the application successfully by a demonstration not altogether professional.

The Anatomical Museum is a foreign device, imported from London. It was first established in New York and Boston, and then in San Francisco. When it was opened here, an attempt was made by the late Dr. Coit and myself to have it suppressed as an indecent exhibition. The case was investigated in one of the courts, and the jury were instructed to inspect it personally, by invitation of the proprietor. They were smitten by its charms, and reported it a school of virtue and of science; and it has been run from that day till now. It was not then known or suspected that it was merely a decoy for even worse purposes. The Boston branch was destroyed by the great fire in that city, and has been refused permission to rebuild.

A few years ago a certain healer of disease came down upon us like a divine presence, his feet "scarcely deigning to tread the earth"—in fact refusing to do so for less than 50 dollars a visit. He advertised in the newspapers to such an extent that it was rumoured that some of them had entered into partnership with him. His certificates of cure have never been equalled by any one save the man who calls himself Aborn. Van Ehrenburg had a brilliant yet brief career, and his flight was in the night time.

Our people have not forgotten the "King of Pain," who dashed through the States in a splendid vehicle with six white horses, scattering like autumn leaves his advertisements of aconite liniment, the virtue of which he had grown acquainted with by some accident. His knowledge of the materia medica was bounded by this one article, but he was an expert card-player and invested in gambling the proceeds of his speculation in human credulity. He travelled very fast and came to a miserable end through a greater "pain killer" than aconite.

Every phase or special dispensation of quackery finds a given portion of the community susceptible to its specific virus; and its popularity endures until the supply of material is exhausted. The itinerant charlatan luxuriates in new localities, and when his failures and blunders multiply, and his impostures are revealed, so as to overshadow his certificates and pretensions, he folds up his tent and steals away in silence to other pastures. Some run their course swiftly, like cholera and smallpox, soon consuming the appropriate material; others become chronic and are disposed to domesticate themselves like the "seven years' itch."

The types of the printer are made to do more pure, unadulterated falsehood, with a smaller portion of truth, in the service of quackery, than in any other department of their application. No person who embarks in the career of charlatanism, or who undertakes to push a nostrum, can have the least hope of success without first throwing away his conscience, and either at once by deliberate design, or slowly by insensible gradations, selling himself to the Father of Lies.

The relation of this system of advertising to the practice of criminal abortion is no trifling matter. Advertisers generally manage to convey covertly to parties concerned the intimation of their readiness to perpetrate this crime. They talk of removing female obstructions, and so forth, or they resort to the trick of advising pregnant women *not* to take their medicines; and though the purport of such publications is well known, yet there are few conductors of newspapers who refuse to print and circulate them, and thus to make themselves accomplices. Thus advertisers and editors are in the daily practice of doing under cover, but knowingly, what would be felony if done openly.

Under the head of "Homœopathic Specifics," advertised extensively, there stands one item distinguished from the rest by its double price, and designated as requiring great care in its administration. And yet this cloven-footed collection of "specifics" is sold by our apothecaries in general.

I will not say that advertisers are all abortionists, but I do say that when men calling themselves "doctors" go into the advertising business they identify themselves with impostors and abortionists, and have no claim on the respect or confidence of society. They throw their reputation on the market and sell it for gold. Their conduct demonstrates that, if they are not abortionists, it is only because the pay is less in that direction.

Certificates of cure with which charlatans bait their hooks are the weakest and most fallacious of human evidence. Never was there a pretender so ignorant, or a medicine so vile or so inert, that could not accumulate thousands of cures, from hypochondriacs, feeble-minded people, charity patients, and accommodating friends, to say nothing of downright forgery, which produces most of the published certificates.

BITTERS.

The most noxious, in fact the only noxious product of distillation, excepting always the alcohol itself, is fusel oil. It is difficult to separate fusel oil from distilled liquors, and its presence in large quantities injures their sale. Such liquors are economically applied to the manufacture of "bitters." Indeed, there is no product of the still too vile to make "bitters" of the first quality, in which the inferior and impure spirit is completely disguised. The process is admirably simple. Some child of toil, who has grown weary with wiping the sweat from his brow, buys a lot of the cheapest whisky which the market affords, and steeps in it one or more bitter herbs, which he finds at hand. He gives the concoction a distinctive name, and calls himself "Doctor," though he has never so much as held a doctor's stirrup, or blacked a doctor's boots. If he has a religious turn, so much the better; or if he is altogether knavish, it is none the worse. He proclaims himself the monopolist of a wonderful herb procured from the Modocs or Apaches, and distributes his dilute tinctures to such amiable fools as will give him certificates. Of superior value are the certificates of clergymen—many of whom are so innocent and credulous as to serve his purpose remarkably well. A few bottles sent to an editor will pay. Perhaps he can find some doctors who will permit him to immortalise them by publishing their names. The rest is plain sailing—thanks to types and newspapers. His fortune is made, and at the same time a large number of drunkards, who have trained on whisky under a false name.

Druggists have strong inducements to engage in the manufacture of "bitters." Bitter herbs in great variety and quantity are liable to accumulate on their hands. In making tinctures and other preparations, large amounts of dregs and refuse matters collect. These sources supply the bitter element, almost free of cost, and sufficient to impregnate immense quantities of alcoholic liquors to the proper standard of medicinal bitters.

The formula, then, for medicinal bitters in general runs thus: —Take of cheapest whisky, an indefinite quantity; of any bitter vegetable, herb, flower, root, or bark, q.s. Mix, and flavour with anything or nothing. Put in bottles and employ an expert liar to write labels and certificates. Present a few bottles to editors and clergymen of taste. Advertise largely and sell for 500 per cent. above cost of material.

CONCLUSION.

Is there no way of protecting society against the array of impostors and impostures which prey on health and life? It is not my purpose to answer this question, nor would it be proper to prolong this article. Various expedients have been proposed —such as prohibiting the practice of medicine or the assumption of the title of doctor without a diploma; requiring all proprietary or patent medicines to have their ingredients printed on the label, and so forth. Hitherto laws for the suppression of quackery have done but little good—at least in America. It is difficult to enforce them, and any attempt to do so on the part of physicians is attributed to sordid motives. But the people, not the medical faculty, have need of the protection. Quacks and quack medicines increase the demand for regular treatment, by creating disease and by training the minds of people to morbid action and their bodies to perpetual dosing. They manure the soil for the growth and accumulation of morbid products. If legislatures determine to interpose the shield of law for the protection of their constituents certainly we shall not object. But law, alone, is impotent. The evil is too deeply rooted for that remedy. I have more hope of success against the nostrum deluge through an infusion of conscience into the "middle-men" —the druggists and apothecaries who stand between the fountain and its distribution, and irrigate the community with the poisonous flood. By their associations, publications and colleges, our pharmacists are fast elevating their business above the standard of the beer-shop, and before long it will be as disreputable for an apothecary to deal in "bitters" and other nostrums as to sell grog. But the advertising quacks and impostors are more difficult to manage. Arrayed on their side are the ignorance, prejudice, credulity, and other base elements of character in the common people, and, above all, the annual subsidy of ten millions of dollars, which enables them to purchase and control the periodical press of America.

Pharmacy.

MINERAL ACIDS IN VINEGAR.*

By M. Strohl.

This method of detecting the presence, and in some degree estimating the quantity, of mineral acids in vinegar is founded on the insolubility of oxalate of calcium in dilute acetic acid and in vinegar, and the solubility of the same salt in diluted mineral acids.

As reagents are generally more sensitive when freshly prepared, the oxalate of calcium is formed at the moment when it is required to act by adding to the liquid to be tried determined quantities of oxalate of ammonium and chloride of calcium in solution. The solutions of these salts are of such strength that equal volumes exactly decompose each other, and produce only a fairly apparent turbidity in vinegar free from mineral acid. A series of trials lead to the choice of aqueous solutions containing one-fifth of an equivalent of the salt in grammes in one litre, so that half a cubic centimetre of each when added to 50 cubic centimetres of vinegar free from mineral acid cause marked turbidity after agitation.

Solutions of the mineral acids used to sophisticate vinegar are then prepared—two grammes of the anhydride in 100 cubic centimetres.

The *modus operandi* is as follows:—Half a cubic centimetre of each of the saline solutions is added to 50 cubic centimetres of vinegar, which is thus rendered turbid. One of the mineral acid solutions is added from a burette until limpidity is restored —say six cubic centimetres are used. The experiment is repeated, but this time the acid is added first and in smaller quantity than before—say four cubic centimetres to forty-six cubic centimetres of vinegar. If, on stirring, the turbidity is at once removed, too much acid has been used, and the experiment must be repeated with a still smaller quantity. In this way the limit of sensibility for each of the acids is arrived at. Five centigrammes of anhydrous hydrochloric acid, ten of nitric anhydride, or seven of sulphuric, contained in fifty cubic centimetres of vinegar are sufficient to prevent turbidity when oxalate of calcium is added as above, and their presence in the vinegar is thus ascertained. If after agitation the turbidity is not removed the vinegar contains less than the above quantities; if it is completely removed, at least these quantities are present, and there may be more. The solutions once made, the process is of easy application and may be made most useful.

STOPPER FOR MOHR'S BURETTE.

E. Mylius suggests a form of stopper for Mohr's burette, which consists of a piece of glass rod about a centimetre long, and of suitable diameter, placed in the india-rubber tubing which connects the delivery jet with the burette. On squeezing the caoutchouc a narrow channel is formed through which the liquid runs. The inconveniences of the ordinary pinchcock, due to loss of elasticity of the caoutchouc, etc., are avoided.

PROPERTIES OF PETROLEUM OIL.

Dingler's Polytechnic Journal gives the properties of good petroleum oil as follows. It should be colourless or light yellow; its smell should not be unpleasant; its specific gravity at 15° C. should not exceed 0·804, and should not be under 0·795. When shaken with a mixture of equal volumes of sulphuric acid and water it should impart a pale yellow colour to the acid, and itself become less coloured; and finally, heated to 34° C., it should not burn when a light is applied.

COD LIVER OIL EMULSION.

In the *Chicago Pharmacist*, Mr. E. Hamm recommends the following formula for a cod liver oil emulsion:—

Pancreatin in powder..	2 drachms.
Water	2 fluid ounces.
Allow to swell and add	
Bicarbonate of soda	1 drachm.
Rub well together, then add	
Cod liver oil	14 fluid ounces.
Oil of peppermint	5 minims.

Dose—a tablespoonful three times a day.

Mr. Hamm has ascertained by experiment that the emulsifying power of pancreatin is greatest in presence of an alkali, and least in presence of an acid.

SYRUP OF ASSAFŒTIDA.

A syrup of assafœtida as little disagreeable as it can be made is suggested by Mr. J. W. Wood in the *American Journal of Pharmacy*. The formula is as follows:—

℞

Assafœtida, select	grs. 256.
Glycerine	f℥ii.
Alcohol, 95 per cent.	fʒiii.
Oil of Gaultheria	gttxv.
Oil of cinnamon	gttv.
Oil of bitter almonds	gtti.

Dissolve the assafœtida in the glycerine by the aid of a gentle heat, and strain if necessary. Dissolve the essential oils in the alcohol and add to the above, after which add simple syrup sufficient to make the whole measure one pint and incorporate thoroughly. Each fluid drachm will represent two grains of the gum resin.

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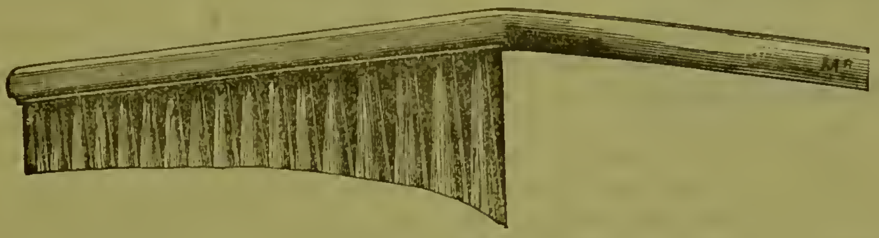
* *Journ. de Pharm. et de Chemie*, p. 172, September, 1874.

SALTER'S NEW TOOTH-BRUSH.

The engraving shows a new pattern tooth-brush, which has been designed by Mr. Evelyn Pierrepont, of Manchester. The handle, as well as the shape of the brush, is entirely altered from the general patterns of tooth-brushes, they being usually made with the handle straight or curved, the bristles all arranged of a uniform length, and the rows of one width, or, as in some of the later and so-called "improved" patterns, with the longest bristles at the end (*i.e.* to enter the mouth first). In using brushes of this description, it will be found that the end bristles *bend down*, and so never touch the molar teeth, the reason being that the act of opening the mouth, ready for the introduction of the brush, elongates the muscles of the cheek, and in so doing draws them tightly against the molars, which effectually prevents such brushes passing far enough back into the mouth, and consequently those teeth that require, and it is intended should receive, even *more attention* than the others, escape it altogether.

In this new pattern brush, the end bristles are very short, and are narrowed as they approach the end of the brush, which allows them to pass freely between the cheek and molar teeth to the extreme back of the mouth *without bending*, and so obviates the difficulty complained of in ordinary brushes. The slight hollowing out of the bristles enables the brush to lie in close contact with all the teeth, from the canine to the wisdom teeth, and the angle at which the handle is bent throws the end or short bristles against the molars (which it is so desirable should be cleaned) at every movement made by the hand in using the brush.



The brushes are manufactured by Mr. George Salter, London.

AN ARTIFICIAL WINE ETHER.

We have received from Dr. Ludwig Raab, Professor of Chemistry in Straubing University, a specimen of an artificial wine ether produced by him. As this may be a subject of interest to some of our readers. we give the remarks on the product in the Professor's words. He says:—

"Wine owes its flavour and odour, that is, its so-called bouquet, to certain heavy and light ethers. In the fermentation of wine, besides ethyl-alcohol, various other alcohols are formed $(C_nH_n-{}_1)$ OH, although only in small quantities. There occur also, and sometimes in not inconsiderable quantities, the various fatty acids corresponding to the alcohols $(C_nH_{2n}-{}_1O)$ OH. These acids, œnanthylic, caprynic, caprylic, &c., form, with the alcohols which arise during fermentation, ethers, which yield the special flavour of wines. The bouquet of many Bordeaux wines is said to be due to butyric, baldrianic, and caprylic ethers. Hungarian wines likewise owe their flavour to caprynic and caprylic acids, and in a few instances to œnanthylic acid. By the distillation of wine, cognac is obtained; the flavour of this naturally depends on the kind of wine employed, a small portion of the ether being carried over with it. In order to prepare cognac artificially it has been attempted to extract the heavy etherial oils from the wine lees. These being but slightly volatile, the process is possible, and by mixing these with perfectly pure alcohol the cognac flavour is produced. But the very small quantity which can be obtained of these oils renders them extremely liable to falsification. My process is, therefore, to prepare these ethers artificially. The formula at present I keep secret. The ethers so prepared I call wine ethers, to distinguish them from the fruit ethers now in the market. They will be found especially adapted for the improvement of low class wines, for the manufacture of punch, and for similar purposes."

THE LEICESTER CHEMISTS' ASSISTANTS' ASSOCIATION.

The Chemists' Assistants' Association held the first meeting of its new session on August 13. The report of the past half year stated that during that period the number of persons who had joined the Society had been greater than in any previous session. The committee, however, regretted to notice that the attendance had been below the average. This they considered due, partly to the attractions consequent upon the season, and more especially to the almost general opinion that a student can obtain sufficient knowledge to enable him to pass the examinations by a very short course of study in London. The committee were firmly persuaded that this plan is quite inadequate to attain the end in view, as the recent large percentage of failures in the examinations has shown. They would impress upon the members the necessity of systematic study previous to presenting themselves before the Board of Examiners.

The prosperity of the library, laboratory and museum was remarked upon.

One member had passed the Major, three the Minor and Modified, and two the Preliminary Examinations during the past session.

The total number of members had been forty-one.

Officers were elected as follows:—Mr. W. B. Clark, president; Mr. T. Wright, vice-president; Mr. J. A. Basker, treasurer; Mr. A. W. Shakespeare. hon. secretary; Messrs. E. H. Butler, S. H. Cadoux, E. J. Bishop.

The treasurer's statement showed a balance in hand of 1*l.* 14*s.* 3*d.*; the total expenses for the year amounting to 14*l.* 6*s.* 4*d.*

Mr. Clark delivered an inaugural address, in which he reviewed the progress of the association from its foundation, closely analysing its tendencies of danger, and pointing out that its strength lay in the personal attention and constant attendance of every member. Each member, said the President, upon joining the Association, should feel that it is his privilege and duty either to bring new food for thought to the Society's meetings, or at least to make himself acquainted with all matters brought before the members by more advanced minds. If for a moment we think in what alone real success can consist, viz., the obtaining of as large an amount of knowledge as possible to as many persons as possible, with the smallest outlay possible of time, energy and money, we shall see to what a large extent the future of the Society depends upon the regular attendance of even the youngest

Votes of thanks having been proposed and carried to Mr. Clark for his address, and to Messrs. Wright and Cadoux for the trouble they had had in preparing for the entertainment of the evening, the meeting came to a close.

Dr. Soubeiran, assistant professor at the Paris School of Pharmacy, has lately been appointed to the professorship of pharmacy in the Montpellier school.

The recent death of Dr. George N. Epps, a brother of the late Dr. John Epps, removes another of the influential advocates of homœopathy.

Medical Gleanings.

THE Hospital Sunday Fund this year was but a slight improvement over that of 1873. The sum received amounted to 29,500*l.*, which has been carefully distributed among the various hospitals and dispensaries entitled to share in it. The largest sum awarded was to the London Hospital, which received 3,796*l.* 15*s.* The great endowed hospitals—Bartholomew's, Guy's, and St. Thomas's—do not share in this collection, and the committee very properly declines to pay anything to such institutions as cannot produce a satisfactory balance sheet of receipts and expenditure during the past three years. By this simple check the danger of subsidising those disgraceful establishments which are merely advertisement dodges conducted under the sacred name of charity is almost eliminated.

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A RECENT number of the *Lancet* contains a very just criticism on the details of the distribution of the Hospital Sunday Fund. While acknowledging the general fairness of the awards, the writer points out several instances in which it is difficult to comprehend the basis. A striking contrast is exhibited between the awards made to Charing Cross and the Westminster hospitals. Charing Cross has 150 beds, accommodates 1,352 patients, has an expenditure of 7,211*l.*, and its property revenue is 4,771*l.*; consequently, it has only to raise annually 2,523*l.*, upon which it gets an award of over 39 per cent. The Westminster has 200 beds, accommodates 2,000 patients, has an income from property of only 600*l.* or 700*l.*, and an expenditure of 7,193*l.*, upon which it receives an award of 15¾ per cent. With regard to dispensaries, it is pointed out that the chief defect of the distribution seems to be the disregard of the claims of those worthy institutions the Provident Dispensaries, the principle adopted by the committee having apparently been to treat the payments of members as if they were incomes derived from property. It thus follows that those dispensaries which are the best conducted are likely to receive the smallest awards.

⁂

The acquittal of the "Peculiar" person who was tried for manslaughter before Mr. Baron Pigott for having neglected to call in medical aid to his child on account of his religious notions raises a difficult and delicate question. In reply to Mr. Poland the judge said that the case of a broken leg was quite a different affair, and we may, therefore, suppose that if that had been the malady the jury would have received a different direction. In other words, Baron Pigott will allow the Peculiar People to trust to a miracle in the case of pericarditis, but not in the case of a broken limb. They themselves have given proof that their faith is strong enough for both tests. It is always a pity to enact a law which shall have the aspect of persecution of a religious sect, but in this instance it seems to us absolutely necessary, if the children of these fanatics are to be protected from what is neither more nor less than murder, to alter the law so as to secure for them the ordinary benefits of human skill, even against the will of their parents, just as, in accordance with the vast weight of evidence, our legislators have seen fit to make vaccination compulsory.

⁂

Cremation seems now approaching its actual birth. The German Cremation Society in New York, numbering about 450 members, have decided on erecting a suitable hall, with walls of iron, 60 feet by 44 feet, containing a rotunda supported by eight pillars. In the centre there will be erected an altar for religious ceremony, and upon a large stand in front of this will be placed the coffin. The ceremonies ended, the coffin would be gradually lowered by means of screws into a furnace, where it would be submitted to a hot air blast of 1,000° Fahr. It is calculated that complete cremation would take place in an hour and a half. The Municipal Council of Paris, having a new cemetery scheme before it, has recommended that legislative authority should be given to cremation, making it optional, and that a prize should be offered for the best means of carrying out the process. Meanwhile, the only step which has been taken in England has been the formation of a cremation society, members of which are required to sign a form something like that of the Band of Hope, intimating that until they can find a quicker method of "vanishing into the infinite azure," they are desirous of being cremated. Mr. W. Eassie, of Great Winchester Street Buildings, is the secretary of this cheerful association.

⁂

There was once a man—Achilles by name—who was invulnerable everywhere, except one little spot in his heel. Our speciality doctors will bring us to that state again if we can afford to pay them for it. Dr. Barnes, in the *Lancet*, says:—"I have recently been honoured by a visit from a lady of typical modern intelligence, who consulted me about a fibroid tumour of the uterus; and, lest I should stray beyond my business, she was careful to tell me that Dr. Brown-Sequard had charge of her nervous system; that Dr. Williams attended to her lungs; that her abdominal organs were entrusted to Sir William Gull; that Mr. Spencer Wells looked after her rectum; and that Dr. Walshe had her heart. If some adventurous doctor should determine to start a new speciality, and open an institution for the treatment of disease of the umbilicus—the only region which, as my colleague, Mr. Simon, says, is unappropriated—I think I can promise him more than one patient."

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The *Medical Record* tells us that Madame Letitia Rattazzi, one of the members of the Bonaparte family, has for some months been visiting the principal towns of Europe, to study the ways and means of establishing a hospital which shall be especially devoted to the treatment of cancer. As is well known, several of the members of this family have succumbed to this terrible disease. The first deposit will be 150,000 francs, to which will be added a biennial prize of 5,000 francs for the best work on the subject, as well as a sum of 20,000 francs for him who shall describe the true cure for cancer. Madame Letitia it seems, therefore, can feel for the sufferings of others, a characteristic which has not hitherto been particularly prominent in the Bonaparte family.

⁂

Among the events interesting to pharmacists must be noted the death of Edward Cutler, of New Burlington Street. The name of this distinguished surgeon was always prominent when a discussion arose respecting the amount of practice that could be secured by a London practitioner. The comparison ran between the late Sir Benjamin Brodie, Dr. Bright, Drs. Chambers and Seymour, and Sir Charles Locock. It is supposed that Dr. Bright really did secure the widest patronage—but that more celebrated persons were known to visit *Mr.* Pennington than any other single individual. Mr. Cutler, however, was by no means behindhand in the race, and when he gave gratuitous advice in the early mornings his door was held half open by a chain. In this he disputed the palm with Lawrence, of Whitehall. Cutler acquired his knowledge of drugs by closely inspecting the contents of a druggist's shop, and made himself familiar with the region behind the counter. At one time he constantly recommended the use of the simple decoction of sarsaparilla—in the exhibition of which he was so successful that the Ess. Sarzæ. Comp. became comparatively neglected. West End firms had to alter their laboratory arrangements. He also introduced a syringe, known by his name, and about which correspondents make enquiries. It was a plain half-ounce glass syringe, with an almost blunt end, the projecting tube being straight, with no bulb, and diminished to about one-third of the usual length. Students who shortly will enter on their educational career would do well to imitate the perseverance of this industrious and skilful member of the medical profession.

[The following list has been compiled expressly for the CHEMIST AND DRUGGIST by L. de Fontainemoreau & Co., Patent Agents, 4 South Street, Finsbury, London; 10 Rue de la Fidélité, Paris; and 33 Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted for the following :—

2024. C. J. Crosfield, J. Barrow, and E. A. Cook, all of Liverpool. Improvements in the treatment of animal charcoal used in the decolorisation of sugar solutions. Dated June 10, 1874.

2071. C. Rumpff, of Glasgow. A new or improved dry process of oxidising anthracene, and improvements in the manufacture of dyes and other colouring matters from the product so obtained. Dated June 15, 1874.

2461. W. Spence, of London. Improvements in the treatment of urine and liquid sewage in order to fix the azote and phosphate substances contained therein and convert them into solid matter, and in apparatus for the same. Dated July 14, 1874.

2486. T. Coad, of Park Cottage, St. Clement's, near Truro, Cornwall. Improvements in stoppers for bottles containing aërated or gaseous liquids. Dated July 16, 1874.

2547. R. Giebermann, of Lower Thames Street. Improvements in the preparation of superphosphate of lime, and in the manufacture of nitrogenised manures. Dated July 21, 1874.

2568. H. Y. D. Scott, of Ealing. Improvements in the preparation of phosphate salts. Dated July 22, 1874.

2571. F. W. Clark, of Amhurst Road, Hackney. Improved apparatus for generating carburetted hydrogen gas. Dated July 22, 1874.

2624. S. Nield and B. Foster, both of Leeds, York. Improvements in the manufacture of prussiate of potash and prussiate of soda, and in the means employed for collecting and utilising the gases and other substances emitted in the manufacture thereof. Dated July 27, 1874.

2628. T. Welton, of Grafton Street, Fitzroy Square. Improved means or apparatus for generating and applying electricity for therapeutic purposes. Dated July 28, 1874.

2639. J. H. Johnson, of London. Improvements in the manufacture of soda and potash. Dated July 28, 1874.

2653. N. Fellows, of South Hackney. An improved scent fountain. Dated July 30, 1874.

2664. C. Eskrett, of Hull, York. Improvements in the means or apparatus employed in the manufacture of seed or oil cakes. Dated July 31, 1874.

2708. J. C. Haddan, of London. Improvements in the direct reduction or treatment of sulphides, oxides, and metallic carbonates in reverberatory furnaces with gas produced from the decomposition of water. Dated Aug. 5, 1874.

2709. M. Mackay, of Mark Street, Finsbury. Improvements in the manufacture of solvents for certain resins and gum resins. Dated Aug. 5, 1874.

Letters Patent have been issued for the following :—

519. C. H. Tonaillon, of Paris. Improvements in apparatus for stopping teeth. Dated Feb. 10, 1874.

653. H. Y. D. Scott, of Ealing. Improvements in the treatment of sewage and in the manufacture of manures therefrom. Dated Feb. 20, 1874.

700. E. Hunt, of Glasgow. Improvements in bottles and stoppers for aërated liquids. Dated Feb. 24, 1874.

808. W. E. Gedge, of London. An improved mode of and apparatus for stopping bottles. Dated March 5, 1874.

830. J. Paterson, of Leytonstone, Essex. Improvements in machinery or apparatus for capsuling bottles and other vessels. Dated March 6, 1874.

855. J. H. Johnson, of London. Improvements in the manufacture of manures, and in the apparatus employed therein. Dated March 11, 1874.

1601. A. V. Newton, of London. Improvements in the preparation of caustic alkali packages. Dated May 6, 1874.

1644. E. P. H. Vaughan, of London. Improvements in the mode of, and apparatus for, heating phosphates of lime. Dated May 9, 1874.

1810. W. E. Newton, of London. An improved process for preparing hydrate of magnesia. Dated May 21, 1874.

1923. J. Lamont, of Glasgow. A new or improved mode and means of stoppering bottles and other vessels, and construction of stoppers therefor. Dated June 2, 1874.

Specifications published during the month :—

Postage 1*d*. each extra.

1873.

4103. A. E. Damolseau. Manufacture of sesqui-chloride of carbon, &c. 4*d*.
4129. N. Fellows. Feeding bottles. 4*d*.
4151. A. V. Newton. Pneumatic apparatus for treating diseases of the lungs and heart. 6*d*.
4153. W. H. O'Shea. Extracting sulphur from sulphur ores. 6*d*.
4164. A. R. Arrott. Manufacture of hydrochloric acid. 4*d*.
4181. P. Curie. Evaporating sewage, &c. 4*d*.
4199. A. S. Stocker. Bottles and stoppers. 4*d*.
4225. J. Casthelaz. Preparing products of aniline, &c. 4*d*.
4268. H. Codd and another. Constructing and stopping bottles. 10*d*.

1874.

38. G. Chapman. Sesqui-carbonate of ammonia. 4*d*.
45. J. Paterson. Capsuling bottles, &c. 8*d*.
72. W. E. Newton. Preparing hydrate of magnesia. 4*d*.
87. J. F. Cockran. Manure. 4*d*.
97. H. H. Murdock. Obtaining potash, &c. 4*d*.
108. W. J. Vernon. Closing or stoppering bottles. 8*d*.

LIQUIDATIONS.

(By arrangement or composition.)

Notices of first meetings have been issued in *re* the following estates. The dates are those of the petitions :—

ATKINSON, BENJAMIN F., Hemming's Row, Charing Cross, surgical mechanician. Aug. 21.

BATTY, GEORGE, trading as BATTY & Co., Pavement, Finsbury, and Cheapside, pickle manufacturer. Aug. 17.

BARKER, GEORGE, Albert Terrace, Gravesend, veterinary surgeon. Aug. 25.

BOWLES, CHARLES A., trading as BOWLES & Co., Chester, chemist, oilman and drysalter. Aug. 27.

CRAN, JOHN, 253 Essex Road, Islington, M.D. Aug. 11.

DIXON, WILLIAM B., Tondu, Glamorganshire, clerk, late Bilston, chemist. Aug. 26.

GARMAN, JOHN STEPHEN & CORNELIUS EDWIN, 278 Roman Road North, Bow, and 1 Appian Place, Old Ford Road, chemists. Sept. 1.

HADEN, EDWARD CRESSWELL, Wandsworth and Clapham Union, New Wandsworth, surgeon. Aug. 14.

MCGORIAN, ANDREW JAMES, 43 Great Homer Street, Liverpool, chemist. Aug. 11.

PORTER, CHARLES, 51 Digbeth, Birmingham, surgeon. Aug. 20.

THOMPSON, JOHN, Haswell Lane, Durham, grocer, draper, and druggist. Aug. 13.

WHITE, GEORGE, 130 Camden Road, dentist. Aug. 31.

WRIGHT, BENJAMIN, Stilton, Hunts, veterinary surgeon. Aug. 10.

DIVIDENDS DECLARED.

PARKER, JOSEPH, Mallow Street, Limerick, M.D., second and final div. 1*d*. and 15-16ths of a 1*d*., making with the first div. 3*s*. 3*d*. and 15-16ths of a 1*d*. in the pound on 7,602*l*. O. A., L. H. Deering, Solicitors, Oldham & Eaton.

ROBINSON, RAWDON B. (bkt.), Dulverton, Somerset, surgeon, first and final div. 10*s*., any Tuesday. W. Webster, Gold Street, Tiverton.

PARTNERSHIPS DISSOLVED.

BURGESS, JOHN & SON, 107 Strand, oil merchants and fish sauce manufacturers. July 31.

BYLES & BRITTIN, Victoria Park Road, Hackney, surgeons. June 30.

CHEETHAM, S. & Co., Chapel Walks, Manchester, garancine manufacturers. June 24. As regards J. W. Whittall and J. Bower.

DIXON, DEAN & Co., Cow Cross Street, druggists' sundriesmen. May 23. Debts by Samuel F. May.

GROSSMITH & WESTON, Newgate Street, perfumers. Aug. 7.

HARRIS & KEDDELL, Wotton-under-Edge, Gloucestershire, surgeons. July 30. Debts by Clement M. Harris.

HARVEY & QUIBELLS, Newark-upon-Trent, chemists, coal merchants, and seed merchants. Aug. 1.

HASTINGS & WALKER, 394 Brixton Road, surgeons. July 1.

MORGANS & GUARD, Minehead, Somerset, chemical manufacturers and English timber merchants. Sept. 3, 1873.

MURRAY & MCBEAN, Newcastle, surgeons. Dec. 31.

RUTHERFORD & SMYTH, Shipley, surgeons. Aug. 14. Debts by William J. Smyth.

SMITH & Co., Widnes, manufacturers of chloride of potash. July 27.

WELCH & SON, High Street, Kinver, Staffordshire, chemists. Aug. 10. Debts by John J. Welch.

WOOD, EDWARD & Co., Port Hill, near Burslem, and Hanover Street, Liverpool, oxide of zinc, borax, and general merchants, and West Derby, manufacturers of borax. June 30. Debts by Harry Coghill.

THE CHEMIST AND DRUGGIST

COLONIAL BUILDINGS, 41A CANNON STREET, LONDON, E.C.
Published on the 15th of each Month.

Subscription, 10s. per year, payable in advance; commencing from any date.
Post Free to every country in the world.
Single Copies, 1s. each.

A Copy of THE CHEMISTS' AND DRUGGISTS' DIARY, published annually, is presented to every subscriber. Price to non-subscribers, 3*s.*

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Cheques and Post-office Orders to be made payable to *Edward Halse* and crossed Martin & Co.

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China	2½ dollars.	Prussia	See Germany.
Cuba	2½ dollars.	Rome..	See Italy.
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J. ALFRED WANKLYN, M.R.C.S., London,
Formerly Professor of Chemistry in the London Institution;
Joint Author of a Book on Water Analysis, and of the Ammonia Process.

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FINIS CORONAT.

ONCE more the date warns us, and the advertisement announcements are in evidence, that our students are about to enter on a new sessional career. We shall not disturb them with stereotyped advice, nor bid them reflect on arguments in favour of diligence, energy, and a careful mode of life. These are necessities, not matters of opinion, and they force themselves unbidden on the attention of the least observant. Let us rather offer the heartiest welcome to those who for the first time will cast their lot in our huge metropolis. For them as for endless predecessors will its snares be spread; for them as for generations that have gone before will its manifest advantages be displayed. We want to press upon them one only thought, after which we must leave future progress to Providence. Let them think well upon the end. What has been the motive that has induced them to exchange home, with its bright surroundings, for our not inviting atmosphere and crowded streets? The end crowns the work, and that old, old Latin motto may be their safest and brightest guiding star. As to what the end is no manner of doubt can be entertained. Pharmacy is the chosen occupation, and in that profession they wish eventually to succeed, if not to shine. By success we mean something tangible and definite, and when on this subject we leave the realms of fancy and come down to the details of common sense. Very nice is it to discuss the nature of ultimate atoms, and to wander spell-bound amongst substitution theories; but in the meantime questions arise respecting the demands of quarter day, and various minor matters of considerable importance. Now, though we are the last to preach a *cui bono* doctrine, and we value science for its own sake and its inherent satisfaction, yet not on that account have we the license to talk glowing platitudes to those who desire to gain an honest living, and who are by no means disposed to sink the trade capabilities of their avocation.

We are of deliberate opinion that in spite of competition, which is inevitable, and a thing of circumstances; in spite of the iniquity of co-operative stores, and the persistent habit of the public to pay annually less for physic, and to take smaller doses; in spite of the diminished trust in the sale of fancy articles, and the wonderful increase in patent medicines—a sufficient accurate acquaintance with the practical details of chemistry opens at this moment a chance not only of reputation, but of solid pecuniary reward. Close investigation of the position enjoyed during the past ten years by well-known pharmacists—a position gained, moreover, within that space of time—will triumphantly bear out the above assertion.

There are historic houses amongst us, the very *prestige* of whose names deservedly attracts custom. Happily, some youthful member of such a firm rises up in due course, and, by his individual talent and researches, conserves and extends its hereditary renown—or, failing this intervention, loss must of necessity ensue. But the houses of which we speak can claim at most a few decades for their existence; and we confidently point to their prosperity both as a stimulus for exertion and as a ground of hope.

A comprehensive, practical knowledge of analysis and an insight into manufacturing and applied chemistry are too material aids in procuring direct advantage to be neglected, and a student can fall into no deeper error than to imagine that such pursuits are foreign to his immediate business, and beyond his sphere.

Therefore we admire sincerely the new regulations for examination that will speedily be enforced. They seem dictated by a perfect acquaintance with the actual wants of the pharmacist, and lead him to shape his energies in the right channel. He is to know more about things, and less concerning books — to *realise* his studies—chemical, technical, or botanical—and, armed with this reality of acquirement, he need not fear *coronare opus*, for he may crown the work either with the legitimate gains of trade, or the personal cultivation of science.

WHAT IS LIFE?

When it was announced that Professor Tyndall was chosen President of the British Association all the world knew that an address of something like scientific sensationalism would be the result. Such an occasion would be a notable event even in such a life as that of Tyndall, and it was not likely that he would miss the opportunity of striking another cold thrill of terror down the backs of those good, orthodox, anti-scientific people whom it has always been his delight to horrify and alarm. The learned doctor's success in this respect, however, has been on this occasion a little doubtful. His brilliant historic survey of metaphysic thought and his lucid explanation of modern biological theories have charmed, thousands of educated readers, who are pleased enough to have such an opportunity of being guided through the maze of misty speculations by which philosophers have tried to explain away the grand and hopelessly incomprehensible mysteries of life and death. But, wherever may be the fault, it is certain that the strange conclusion which so much learning has forced on the learned orator has struck neither the vein of horror in his opponents, except in those cases where readers had previously prepared themselves for a fright, nor, to a great extent, that of sympathy in his friends. The problem which Professor Tyndall set himself to discuss, and the controversy the history of which he sketched, are more or less familiar to every thoughtful mind. They are subjects on which every man is equally entitled, if not equally fitted, to form his own opinion. The most learned of philosophers can only *guess* as to the origin of life, and the humblest student may do the same. From Democritus to Darwin legitimate science has made marvellous strides, but the later guess brings us no nearer to the solution of the mystery than the earlier one: with all its impatient struggling science has no other logical conclusion to draw as the fruit of its efforts in this direction than that the mystery is insoluble. Surely, if scientific methods are to be followed on this subject as on others, so much might be granted, and one might have almost supposed that that was the conclusion to which the argument of the Professor was to lead. But not so; here was the opportunity for a climax, or rather a paradox, and it was too tempting to let pass. The investigator has surveyed the universe and studied its phenomena; he has made himself acquainted with the world of thought as well as with the physical world; and the problem that has ever met him, and has ever baffled him, has been the difference between dead matter and matter in which he recognises the breath of life. How and whence came that mysterious inspiration? This is the problem; how does Dr. Tyndall treat it? Why, by a bold, though apparently unconscious, denial of the existence of a difficulty at all. He says, "I prolong the vision backward across the boundary of the experimental evidence, and discern in matter, which we in our ignorance, and notwithstanding our professed reverence for its Creator, have hitherto covered with opprobrium, the promise and potency of every form and quality of life." In other words, life is developed from certain atoms of dead matter, which engender it; therefore, if language means anything, those atoms, that dead matter, are not dead but alive: the tantalising spirit has eluded us once more, has receded just as she seemed within our reach, and we have reached an infinite series of life-producing atoms, if we admit the power which is here claimed. But then, unless everybody, scientists included, is moving about in a dreamland, as some of the heroes of Tyndall's narrative have imagined, in which case all observation is useless, it would seem to be established that there is a real difference between objects animate, and objects inanimate. On that obvious difference the problem rests, and when Dr. Tyndall asserts that dead matter produces forms of life he is either offering us a manifest absurdity, or he might express himself more simply by asserting that there is no such thing as dead matter, that all material is instinct with life, and that therefore our senses and our sciences are all mere delusious, and metaphysical paradoxes alone are truth! Assuredly it was well to warn us that these speculations are on the other side of "the boundary of experimental evidence."

Our author is verily strong in faith as he gropes in these dark shadowy regions, but one would think such an investigation might make him more tolerant of the faiths, certainly not less securely based, which others hold. Hitherto, says the Doctor (that is up to the date of this great discovery and this heroic confession), we have always covered matter with opprobrium. Who has? Certainly not those who not only profess, but really entertain, a reverence for its Creator. And is it not a little bombastic to arouse the British Association to an opposition, "to the death if necessary," to any religious system which shall exercise despotic sway over man's intellect? As well rave against the Druids. Dr. Tyndall would dearly love to be made a martyr; but that order of nobility has died out long ago. Not even "the abandonment of all disguise" will win for him an hour on the rack or a death at the stake. He must put up with a baronetcy; it is all our government has to offer in the way of immortality to men of learning. "Where, then," Dr. Tyndall may reasonably demand, "Where is the cause of fear? We fought and won our battle even in the Middle Ages: why should we doubt the issue of a conflict now?" Why, deed? But we may justifiably question the existence of one.

When we get beyond "the boundary of experimental evidence" neither Tyndall nor the whole British Association combined has a right to command our faith. The prospect is but as "through a glass darkly;" ages of scientific thought have proved powerless to illumine the vista, and now can only in hopeless poetry picture the loftiest minds melting "like streaks of morning cloud into the infinite azure of the past." Elegantly as this thought is expressed, it is as gloomy as Byron's picture of the world without a Sun, in which he tells us that—

> The clouds perished; Darkness had no need
> Of aid from them; She was the Universe.

Surely, if this be the gospel according to Biology, we have little enough to be thankful for. It is but a literal adoption of the course against which Professor Tyndall himself so eloquently protests—a psychological suicide—the adoption spiritually of Hamlet's hint; the purchase of intellectual peace at the price of intellectual death.

ON CHEMICAL CONSTITUTION.

WHILST Dr. Tyndall's oration was greatly tinctured with imagination, with speculation, and with general diffusiveness, Dr. Crum Brown's address to the Chemical Section of the British Association was characterised by exact ideas, definite statements, and a completeness of thought which may almost be termed crystalline. Dr. Tyndall, in his address, reminds the reader who is used to analogy of the genii in the "Arabian Night's Entertainments," whose powers of expansion were so enormous, but whose corporality was ultimately able to be enclosed in a vessel of insignificant size; on the other hand, Dr. Crum Brown is all compactness and solidity, but his ideas reach, by their inherent power of radiating intellectual light, far beyond the sphere of matter only. Dr. Tyndall is, metaphorically, gaseous, transmittent, absorbent. Dr. Crum Brown is solid, radiant, bright; both are necessary to the outflow of science at the present day, but there can be no question as to which is the most attractive to an appreciative listener. Without giving Dr. Tyndall the credit of being a thorough and complete materialist, recognising no entity but that which he can see, hear, taste, smell, or feel, his address as President of the British Association gives the idea that he is trying to evolve force from matter as the cause, and not to follow the course which most profound thinkers reverence, namely, to endeavour to evolve the changes of matter from force as the moving agent. The latter plan is, however, the one which Dr. Crum Brown apparently adheres to; the one proceeds, in theory, from externals inwards, the other from internal ideas of force and motion to the exterior of matter.

Whether these comparative views of the expoundings of two great minds be correct or not, the title at the head of this paper is perfectly applicable to the address to the Chemical Section. Commencing by pointing out that the truth comprised in the theory of phlogiston was not recognised by its own supporters, Dr. Crum Brown proceeds to compare the dualistic radical theory of Berzelius with the unitary substitution theory of Dumas, Gerhardt, and Laurent, and to show that, in both these systems, chemical constitution is regarded as the order in which the constituents are united in the compound. This he does, in one instance, by the relation of trichlor-acetic acid and acetic acid respectively to oxalic acid, and in another instance by the connection of the sulpho-acids with hypo-sulphuric acid. The formulation of compounds containing three elements is also brought to bear upon this important question with the same result, for Berzelius gave prominence to order in the uniting of constituents by distinguishing two modes of chemical union. One of these, the electro-chemical, was fully capable of explaining the existence of binary compounds, the other, in which an unknown force was called into being, explained the union of two binary compounds having one element in common. The full meaning of these distinctions is only able to be realised by the substitution theory, although it is inherent in the theory of Berzelius.

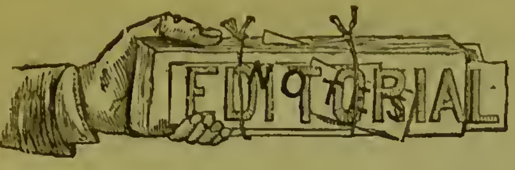
The substitution theory, by the strictly relative character which it established between the constituents of a compound, changed the unit of equivalence from oxygen, a di-valent body, to hydrogen, a uni-valent substance. The lecturer then goes on to illustrate the power and value of the theory of Berzelius by showing that the uniting in pairs, the salient point of Berzelius, is able to be shown by the substitution theory, but that it never is so put forth, because in this case fractional formulæ, such as $KO_{\frac{1}{2}}$, $HO_{\frac{1}{2}}$, are necessary to its elucidation. The order in which the chemical constituents are united in a compound must not be confounded with the relative position of their atoms (ἄτομοι), for the phenomena of combination and decomposition are not alone sufficient to prove even that atoms exist. Chemistry is really a branch of physics, and the names of Faraday, Graham, and Andrews are guarantees that the so-called physical side of chemistry will never be divorced from the study of chemical change. The special directions in which physics has influenced chemical theory are: 1. Electrolysis. 2. Vapour density. 3. Specific heat. A real theory of chemistry can only be attained when the facts of the science are able to be connected by some hypothesis with the general theory of dynamics. "Chemistry will then become a branch of applied mathematics, but it will not cease to be an experimental science." In conclusion, Dr. Crum Brown points out that "we do not know when the change will take place, or whether it will be gradual or sudden, but no one who believes in the progress of human knowledge, and in the consistency of nature, can doubt that ultimately the theory of chemistry, and of all other physical sciences, will be absorbed into the one theory of dynamics."

On a former occasion Dr. Crum Brown himself pointed out where the truth lay hid in the theory of phlogiston when he remarked that we now know "that no compound contains the substances from which it was produced, but that it contains them *minus* something. We now know what this something is, and can give it the more appropriate name of potential energy; but there can be no doubt that this is what the chemists of the seventeenth century meant when they spoke of phlogiston."

With a similar facility for finding truth at the bottom of a well, and of showing that to understand the chemistry of the present day a good knowledge of the theories of former days is required, Dr. Crum Brown indicates "that there is much real agreement between the two modes of representing chemical ideas, historically derived, the one from Berzelius, the other from Dumas, Laurent, and Gerhardt."

The doctrine of indivisible atoms (to use a tautological expression) does not appear to be held by Dr. Crum Brown in the same sense as it is by Dr. Tyndall. He never thoroughly gives up the idea of the divisibility of his atoms, but it would rather appear that he believes in aggregations of particles that, for the purpose under consideration, may, under certain circumstances, be practically indivisible, but, put those same particles under different conditions, and then he will not answer for their indivisibility. Therefore, the lecturer may be taken to be a disbeliever in atoms according to the etymological signification of the word.

That Dr. Crum Brown looks upon force as a prior causation to matter, and that foot-pounds per second will be the key to the enlarged physical science that he contemplates, is evident from the crowning and concluding paragraph of his address, which breathes of freedom of thought, correctness of judgment, and the harmony of natural laws.



REPUTATION OF THE BRITISH PHARMACEUTICAL CONFERENCE IN FRANCE.

At the meeting of the Paris Société de Pharmacie, August 5, 1874, a letter was read from the President of the British Pharmaceutical Conference, inviting the attendance of delegates at the meeting of the said Conference which was about to open. Some members thought that the Society should accept this invitation, and delegate one or several of its members to the conference; but M. Mayet remarked that this Conference had not the same character as the Pharmaceutical Congress at St. Petersburgh, and he did not think it was worth while to burden the Society with an expense in this respect. However, he added, one of their colleagues, M. Adrian, was just going to London, and he thought he would represent the Society gratuitously if a proper delegation were conferred on him. The President, M. Boudet, supported the suggestion, but MM. Grassi and Roucher opposed this course on the ground that the Society was not sufficiently informed as to the subjects which the Conference would consider. M. Limousin explained the objects of the Conference, and somewhat warmly urged the Society to accept the polite invitation they had received. The President, however, went over to the other side, and at last the question of sending delegates to the London Conference, being put to the vote, was negatived. The two French gentlemen who came, therefore, visited us privately, not in a representative capacity.

HARD TIMES.

If anyone may with reason mourn for the good old times it is surely above all others the dispensing chemist. The younger members of the trade can hardly hear without a groan the glowing stories which are sometimes narrated of the days when medicines were mostly taken in draughts, and when draughts were paid for as they should be. The correspondent of a contemporary (Mr. Charles Eve) has given an analysis of several hundred prescriptions dispensed by one of the most famous London houses (Allen, Hanburys & Co.) in 1836, and of an equal number dispensed in this year of grace. In the meantime, be it remembered, the Pharmaceutical Society has been founded and has flourished, the British Pharmaceutical Conference has been established, chemists' balls, conversazioni, and Crystal Palace dinners have been introduced, and generally "the status of the profession has been elevated." With what result? Taking these prescriptions promiscuously, omitting only those for external applications, Mr. Eve finds that whereas *then* draughts formed a tenth of the whole, they are *now* but a hundredth part. Mixtures with 2 oz. doses were in 1836, 5·5 per cent.; in 1874 they make but 1·5 per cent. Drops, on the other hand, the doses of which are one fluid drachm or less, are now 10½ per cent., instead of 5½ per cent., as in 1836; mixtures of half ounce doses are 17½ per cent. now, against only 1 per cent. then. Pills, it may be interesting to know, are now dispensed in the proportion of 32 per cent. of the gross total of prescriptions for internal remedies. In 1836 their proportion was 42 per cent. Powders were then 7½ per cent.; now they are but 5½ per cent. But some optimist may try to restore the rose colour so abundantly used in this age by endeavouring to prove that if doses are smaller, charges are correspondingly higher. Mr. Eve, however, has prepared his remorseless arithmetic to confound any such attempt. He shows us that in 1836 50 mixtures, containing 338 doses, amounted to *5l. 9s. 10d.*, which was rather more than 3½*d.* per dose. In 1874 the gross price of an equal number, containing in all 618 doses, was *5l. 11s. 8d.*, or almost exactly 2*d.* a dose. This is hopeful.

LEAD IN SODA WATER.

A Glasgow doctor has recently made public in the most solemn manner his discovery of lead in large quantity in some soda water which had been supplied to a patient of his by "a very respectable firm in Glasgow," whose name, however, he refrains from mentioning, as he does not know what action may be taken by his patient's friends with regard to them. Dr. Wallace, of Glasgow, analysed the soda water in question, and reported that it contained lead in the proportion of nine-tenths of a grain to the gallon. The London medical papers reproduced the statement, and it has since gone the usual journalistic round.

Supposing the analysis to have been correct, it only proves that an abnormal sample of soda water had got into the laboratory. That there is nothing even approaching danger is capable of mathematical demonstration. First, in all large aërated water works the water is invariably kept in slate or wooden cisterns; the only moment of the manufacture when it comes into contact with any lead is in passing through the pipe from the cylinder to the bottling machine. A full-sized machine will turn out about 300 dozens a day, and thus, according to Dr. Wallace's estimate, would consume more than 200 grains of lead daily. The pipe seldom weighs more than 10 or 12 lbs., so that a year would just about annihilate it, not to mention that it would crumble to pieces long before. As a matter of fact, however, these pipes wear for years, and we doubt if one has ever been known to have been dissolved away to any appreciable extent. It is grossly unfair to the soda water trade to parade this extraordinary instance before the public in the form of a general caution.

ANOTHER ATTACK ON SODA WATER.

We should scarcely have expected that so shrewd and widely-informed an authority as Dr. Lankester would have sought for a little typographic capital by a repetition in solemn sorrow of the now well-established discovery that soda water does not as a rule contain the Pharmacopœia dose of ten grains of carbonate of soda in each bottle. Dr. Lankester must know as well as any man living that aërated water makers are not to blame in this matter. They have (generally, but not universally) omitted the soda, simply for the reason that their customers prefer the beverage free from the alkali. The misnomer has grown purely as a result of public taste, and is no more a fraud than is the worthy Coroner himself. Perhaps it has never occurred to him that the name he honours was in all probability first conferred on one of his ancestors on account of that gentleman's residence at, or connection with, an ancient town in Lancashire. Exactly as reasonable as this display of scientific indignation would be a pious paragraph protesting against the doctor's absence of honesty in continuing to reside in the West End of London. But what is serious in this matter is that Dr. Lankester, if he holds such views as he professes, might, as public analyst for St. James', proceed against the chemists and druggists from whom, he says, he obtained his samples, under the Adulteration Act, and might not improbably obtain a verdict against them. That retailers are to be liable to penalties for all the freaks of nomenclature for which the world at large is really responsible is monstrous; and this instance shows how important it is that the new Act, when it comes, should protect from prosecution the dealers in substances which are sold under conventional, but not exactly descriptive, titles.

AN AMERICAN PHARMACIENNE.

The last number of the *American Journal of Pharmacy* contains an article from the pen of a Miss Kate Crane, who dates from the University of Michigan. The lady describes a series of experiments on the cohesion-figures of certain fixed and essential oils, as exhibited when a drop of the oil to be experimented with is allowed to fall on a surface of clean water. Miss Crane thinks these figures are sufficiently characteristic to enable a practised eye not only to distinguish one oil from another, but even to detect adulterations. The idea was suggested by some articles published in the *Chemical News* a few years ago by Dr. Moffat, but Miss Crane acknowledges that her results, as far as olive oil is concerned, do not quite coincide with those obtained by Dr. Moffat; whereupon, with a beautiful faith, rather than let this fact stand in the way of her theory, she boldly claims it as a proof thereof, and explains how it demonstrates the impurity of the oils with which she has experimented. We cannot think that such delicate tests as these are likely to prove workable, but it seems very probable that, as suggested by Miss Crane, it may be possible by their aid to detect readily such a fraud as the admixture of turpentine with oil of bergamot. Miss Crane says the figure assumed by bergamot mixed with turpentine may be distinguished from the pure oil by exhibiting a watered surface while spreading and by a finer play of colours on its surface.

It is proposed to establish a College of Science and Literature in Bristol, and to incorporate with it the Medical School which has existed in that city for many years. The institution will, we presume, be analogous to the Queen's College in Birmingham, and Owen's College in Manchester. Why should not the energetic pharmacists of that city, and their Clifton neighbours, be also incorporated, and get a course of lectures provided, as at Newcastle?

The Sum of Science.—Professor Tyndall's laborious address to the British Association may be readily summed up by the simple re-statement of a very old argument. An egg contains all the material necessary to form a chick. It holds also, for a time at least, the force requisite to construct the animal out of its component elements. The only thing needed is to set the formative process in action by the application of another form of force or motion called heat. But this last must be supplied from without. The sum of Professor Tyndall's researches is precisely analogous. He finds in matter "the promise and potency of every form and quality of life," just as the naturalist and the organic chemist find the organic materials of a chick, and the promise and potency to form one within the eggshell. But neither the philosopher nor the experimentalist can go one step beyond the facts. They are wholly unable to explain the something from without, in whose absence neither an eggful nor a world of life can be called into palpable existence. This is the point at which philosophy again arrives—the old point at which it has been arriving by various paths ever since the first effort to penetrate an inscrutable mystery. The Egyptians symbolised the difficulty, and their inability to surmount it, by offering the mysterious egg reverently to their gods. They laid the unsolved problem of the finite at the feet of the Infinite. Professor Tyndall and the British Association might learn wisdom, without humiliation, from the ancient idolators, and emulate their not ignoble submission.—*Globe.*

REVIEWS

FALSIFICATIONS.*

Our legislature, our magistrates, our analysts, and our traders have been in difficulties for several years for the reason that no one can give a sufficiently distinct and at the same time a sufficiently elastic definition to the term *adulteration*. The word does not seem to adapt itself to the language of the law, and no number of interpretations and arguments and precedents seems to have the effect of giving it a settled meaning. In this trouble the draughtsmen of the new Act, which is promised us for next year, might do well to transfer to our language the far more expressive word, *falsifications*, by which the French designate exactly those frauds which it comes within the province of the law to punish. Professor Soubeiran's explanation of the term is itself as nearly perfect as can be. He says, "Falsification occurs every time that foreign substances, injurious or inert, are introduced voluntarily into a product. Mixtures or accidental substitutions which may occur either by inadvertence or in consequence of defects in the process of manufacture, however dangerous they may be to the public safety, are not to be regarded as falsifications." At the same time even this interpretation does not cover such a fraud as the abstraction of cream from milk, for example, and in that respect fails to convey the full signification of the word, which in itself undoubtedly does include such abstraction of the valuable ingredients of any product.

The work which Dr. Soubeiran has set himself to accomplish is the editing of a complete dictionary of the adulterations usually or unusually practised on foods, medicines, and other substances. This labour demands a most extensive acquaintance with the pharmaceutical and chemical literature of France, Germany, England, and America, and much more besides. It demands not the mere collection of these materials, but also their intelligent collation; the elimination of useless investigations, and the presentation of the whole in a classified manner. We have no hesitation in saying that Professor Soubeiran has succeeded to admiration. Every page of his volume bears marks of his industry and good judgment; and the whole is consequently a work of undoubted value, and one that will take its place as a standard of our present degree of information on falsifications and the means of detecting them.

In order to show the plan of the work we will select for translation one of its shorter articles.

Balsam of Copaiba.

Balsam of copaiba proceeds from incisions made into the trunks of *Copaifera officinalis* (Jacq.), *C. multijuga* (Hayne), *C. langsdorfii* (Desf.), *C. coriacea* (Martins), and various other species of the leguminosæ family. It is a resinous, transparent, yellowish liquid, with a powerful odour, and an acrid and bitter taste, soluble in concentrated alcohol, but yielding a solution of a milky appearance.

Two principal sorts are known: Brazilian copaiba, very fluid, clear yellow, and with no deposit; and Columbian or Maracaibo copaiba, yellowish, and always presenting an abundant deposit of a crystallised resin.

Balsam of copaiba should be transparent, free from any turpentine odour when warmed, soluble in two parts of alcohol; it dissolves the fourth of its own weight of carbonate of magnesia by the aid of a gentle heat, and becomes translucent.

The mixture with magnesia proposed by Blondeau (*Journ. de Chim. Med.*, t. i. p. 560; t. ii. p. 41) becomes translucent in a few hours, and takes the consistence of a thick mucilage of gum arabic, but this process is not absolutely exact, for the result is only produced if the magnesia or the balsam contains a small proportion of water (Roussin).

The balsam of copaiba which has been obtained by a decoction of the branches is of a milky appearance, of a thicker consistence, and a more nauseous taste.

Turpentines, which appear to be employed but rarely as adulterants, give to copaiba a thicker and more viscous consistence. They are readily detected by pouring three or four drops of the suspected balsam on blotting paper and slightly warming, but not applying sufficient heat to develop visible vapours; spirit of turpentine evaporates first, and is recognised by its odour. This process does not yield satisfactory results when Venice turpentine has been used as an adulterant; in this case Hager mixes 5 or 6 drops of water and 5 or 6 c.c. of the balsam in a capsule with a sufficient quantity of litharge to form a semi-liquid thick mass, at a temperature of 20° to 25°; the mixture exhales a well-marked odour of turpentine if the balsam contains 10 per cent. of turpentine, and distinct enough if it contains but 5 per cent. Or the following process may be adopted:—Take 5 grammes of balsam, 8 or 10 drops of water, and 15 grammes of litharge; warm for about a quarter of an hour in a sand bath; when cold, the hard mass is powdered and boiled with benzine; the liquid evaporated and the residue macerated with 90 per cent. of alcohol for some hours. The alcoholic liquor is evaporated, and yields 2 to 3 decigrammes of resin, which, treated by potash, gives a liquid scarcely coloured by sulphide of ammonium, while, in the case of adulteration by turpentine, an abundant and brownish black precipitate is formed in the liquid. The compound of lead with the resin of the turpentine is soluble in benzine and alcohol, while that of copaiba is not. (*Pharm. Centr. Halle*, 1870, p. 296.)

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* *Nouveau Dictionnaire des Falsifications et des Altérations des Aliments, des Médicaments, et de quelques produits employés dans les arts, l'industrie, et l'economie domestique.* Par J. Léon Soubeiran, professeur à l'Ecole Supérieure de Pharmacie de Montpellier. Paris: Baillière et Fils.

The mixture of turpentine may also be recognised by the balsam adhering to the sides of the bottle containing it by reason of its viscous condition. Reveil has suggested the immediate solidification of ammonia. Another suggested test has been to fill a bottle two-thirds full of the suspected balsam, and to shake it; if the balsam is pure it will run down quietly and without interruption, while, if adulterated, very apparent streaks will be observable all down the sides of the bottle immediately that the agitation is discontinued.

The presence of fixed oils, such as castor or linseed oils, may be detected by pouring a drop of the balsam on filtering paper and slightly warming, so as to evaporate the essence. A transparent mark with distinct limits is shown if the balsam be pure, but the stain is surrounded with an oily margin if the balsam has been adulterated. (Chevallier, *Journ. Chim. Med.*, t. iv. p. 619).

Planche has recommended ammonia for the detection of castor oil; the balsam is to be shaken for some little time with solution of ammonia; it remains clear and transparent if pure, but becomes thick and milky if castor oil be present. (*Journ. de Pharm.*, t. xi. p. 228).

By boiling balsam of copaiba in water long enough to drive off all the volatile oil, a resin remains, which, on cooling, becomes quite dry if the balsam was pure, but remains soft if any fixed oil was mixed with it. (Henry and Deloudre).

Hager has observed balsam of copaiba adulterated with oil of sassafras. His process for the detection of this falsification is to mix 1 c.c. of balsam with 2 c.c. of concentrated sulphuric acid, and when cool to add 20 c.c. of alcohol, warm to boiling, and then set aside. If the balsam be pure, the addition of the alcohol gives a yellowish grey or pale-red milky liquid, which, on boiling, becomes yellow, clear, and transparent, while a resinous deposit settles at the bottom. In the case of a mixture of oil of sassafras, the addition of the alcohol produces a deep reddish brown colouration, which becomes deeper by boiling, and assumes a violet tint.

Some of the articles in this dictionary are more valuable than the foregoing, but they are often longer, and are not unfrequently illustrated. We may especially refer to the treatises on musk, on rhubarb, and on vinegar, as instructive essays. An excellent feature of the work is that to many of the articles the author has subjoined a series of references to the published literature on the subject, so that a successor working in the same field will find his preliminary labour considerably lightened.

In an appendix, Dr. Soubeiran gives a summary of the legislative enactments of France, England, Germany, Italy, Switzerland, Holland, and Belgium, in respect to adulteration. We presume that most of those to whom this work is likely to be useful will be able to read it in its native language; but if chemical acquirements are more general than linguistic ability, we shall hope to see an English translation before long, for the work is of universal importance, and is worthy of an international circulation.

MUTER'S PHARMACEUTICAL CHEMISTRY.[*]

It is a common saying that there is no art so difficult of acquirement as the art of brevity. A man may be brief with comparative ease if he has nothing to say, or if he has something to say and does not know how to express it; but to be able to put into half a dozen words or lines, as the case may be, what somebody else has extended through as many scores—"to sweep," as Dr. Tyndall said of Professor Huxley, "the curve of discussion through the really significant points of the subject," is an accomplishment which is not picked up without some amount of trouble.

But there is brevity and brevity. It is one thing to make a few notes of a lecture, or a book for one's own use, by referring to which we may readily enough sketch in the details for ourselves; it is another thing to express what we think or know so concisely that not a word is wasted, and yet so clearly that an entire stranger may have no difficulty in comprehending the full meaning of the idea we wish to convey. The present is emphatically an age of *précis*; the man who has something worth telling, and who can say it with the least possible hesitation, stands some chance of a hearing; but the author whose only use of language seems to be, as Voltaire puts it, to conceal his thoughts, may be quite certain that people will neither find time nor inclination to listen to him.

The author of the volume before us seems to have understood Shakespeare's dictum in its widest sense, and to believe that, if brevity is the soul of wit, it is the very pith and marrow of scientific teaching. The essay was a bold one; the result has been signally successful. Indeed, we are far from sure but that in its present succinct form the work is not even more suited to its purpose than if it had been developed into the exhaustive treatise which the preface informs us was the original design. It is a good thing for a student to be thrown sometimes on his own resources; there is too much of the ready-cooked-food principle in education now-a-days, too many phosphorus pilules and royal roads to learning in demand. But if we are disposed to quarrel with some of the popular modes of presenting scientific truths, we are by no means to be understood as finding fault with a teacher who endeavours to throw a novel force and freshness into old and somewhat hackneyed realities. This is an eminent characteristic of Dr. Muter's volume. The chapters, which are 15 in number, and extend over 750 pages, are arranged on the principle of the course of lectures delivered at the South London School. The personal element, the existence of which constitutes the superiority of oral over every other form of instruction, is thus brought out more effectively than could be possible in any different way.

The book opens with a concise but sufficient explanation of the modern theories of chemistry. Then the general properties of matter, such as extension, impenetrability, inertia, &c., are noticed, and the doctrines of atomic and molecular combination expounded. Rarely do we recollect meeting with an instance in which an obscure subject has been handled with more originality and happy effect than that which occurs in the description of the formulation of salts. The "balance of power" is the Scylla upon which many a poor student's chemistry has been wrecked, and the point at which he has been most susceptible to the onslaught of a merciless examiner. But how does Dr. Muter put the case?

"Here the student," page 21, "must recollect that in chemical notation all simple radicals, such as I, are multiplied by small figures placed immediately after and under the line of the symbol, as in the formula just depicted ($Pb\,I_2$). Compound radicals, on the other hand, are multiplied by placing large figures before them. Thus, suppose we wish to indicate two molecules of the radical of nitrates; we write $2NO_3$. It would not be correct to write N_2O_6, because the instant the formula NO_3 is altered, it no longer represents a nitrate. Compound radicals, therefore, must not have their small figures changed, but must invariably be multiplied by large figures placed on the left. As an example we shall take the series of sulphates:—The radical SO_4, being a dyad, the formulæ of its compounds, first with a monad radical, such as potassium, secondly, with a dyad radical, like calcium, and thirdly, with a hexad, say ferric iron, will be as follows:—

Potassium sulphate, $K_2{}'\ So_4{}''$
Calcium sulphate, $Ca''\ So_4{}''$
Ferric sulphate, $Fe_2{}''\ 3So_4{}''$

In the ferric sulphate we have a balance of value similar to that produced by two threepenny pieces on the one hand, and six pennies on the other. One more example will suffice. The radical of phosphates is $Po_4{}'''$. Phosphoric acid (the radical combined with hydrogen) will therefore be $H_3{}'\ Po_4{}'''$, just as three pennies are equal in value to one threepenny piece. Calcium phosphate will present at first sight a greater difficulty, because, the calcium being a dyad, the question arises, how are two and three to be multiplied so as to be equal in value? By considering this substance as money, this problem may easily be solved. Each Po_4''' represents a threepenny-piece, and each Ca'' may stand for twopence; so, as two threepenny-pieces will balance three sets of twopence, giving an equal value of sixpence, the formula will be three of Ca'' and two of Po_4'''. The Ca'' being a simple radical, is multiplied by a small figure, and the Po_4''' being compound, is multiplied by a large figure, making the formula of calcium phosphate $Ca_3''\ 2Po_4'''$."

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[*] *An Introduction to Pharmaceutical and Medical Chemistry.* By Dr. John Muter, M.A., F.C.S. London: Office of the South London School of Pharmacy, Kennington Cross; and sold by Simpkin & Marshall.

In the second chapter the practical processes concerned in chemical action, such as solution, evaporation, distillation, and crystallisation are described. The various methods of taking the specific gravity of solids, liquids, and gases are minutely explained, as are also the means for correcting the volumes of gases for temperature and pressure. The principles of gravimetric and volumetric analysis are made intelligible, and an outline given of the science of spectrum analysis.

The secret of Dr. Muter's success as a teacher undoubtedly lies in what we may call his power of *systematising*. His method bears the same relation to other methods as the natural system of classification of plants bears to the Linnæan system. It is rational instead of empirical. In the generality of chemical works the salts of the metals are described under the heads of their respective basylous radicals. Quite a different mode of treatment is adopted here. Commencing with hydrogen—which, in accordance with the views of Professor Graham, is regarded as a metal—the author describes the source, physical characteristics, means of isolation, and chemical properties of twenty-seven of the principal metallic elements. Each of these descriptions occupies, on an average, one leaf of the book. On the opposite page is exhibited, in a tabular form and bold type, the behaviour of the metal with the various group and separatory reagents. The effect of this arrangement is that the peculiarities of the element and its special analytical reactions are indelibly impressed on the mind of the student. This being done, the next step is an easy one, and accordingly we find in Chapter V., *et seq.*, that the simple acidulous radicals, as chlorine, iodine, and oxygen, carbon and sulphur are brought before us. Following the descriptions of each of these elements, are also those of its combinations with the basylous radicals previously enumerated. The student has thus the advantage of comparing together the various chlorides, carbonates and oxides, and of being able to remember their appearance, solubility, &c. To anyone not accustomed to such a system of classification, the apparent incongruity of the various substances grouped together as members of the same family must, at first sight, be somewhat startling. Thus, under oxygen we find the hydrates as well as oxides, and indirectly the whole of the alcohols and their derivatives. Connected with nitrogen we have the nitrates, nitrites, and then the cyanogen compounds, and out of ammonia are developed the alkaloids. In accordance with the opinion now generally accepted, arsenic is placed amongst the non-metallic elements. It has long enough held an epicene position: and we hope that now it will be left undisturbed. The fact that it forms no definite series of salts ought, we think, to have decided the question some time ago. After depriving it of its birthright, however, it is too bad of Dr. Muter to add insult to injury by telling us—on page 655—that "*metallic* arsenic is sometimes used in veterinary medicine."

With a few exceptions, Dr. Muter is fairly consistent in his notation and nomenclature. This is no mean praise; for there is nothing which proves more disastrous to the student, or which merits more emphatic condemnation—than the indiscriminate use of two or three systems. When the Daltonian hypothesis, the binary theory, Franklandic gibberish, and the chemical lunacy of the Pharmacopœia, get mixed up—as they are in some books we have met with—who can wonder that a student's brain should be in a condition to which chaos itself were order. We must point out, however, one instance in which theory and practice are at variance even here. And in criticising a work of this kind it is necessary, be it remembered, to place oneself, at certain points, in the student's place, endeavouring, if possible, to ascertain whether, without any previous knowledge of the subject, we should be able to find that information which would satisfy, and that accordance in statement which would not mislead us. On page 5 we are told that "atoms cannot exist in the free state, but that they must be combined with other atoms of the same or of a different element in order to form molecules, which alone can assume that condition. If, therefore, we wish to express that an element—hydrogen, for example—is in a free state, we must not write simply H, but H_2; thus intimating that at least two atoms have coalesced to produce a molecule capable of existing in the free state." Notwithstanding this statement the very first equation in the book, page 23, is written $H_2+O=H_2O$. And again, page 24—$Zn+2HCl=ZnCl_2+H_2$.

True, we know that one atom of zinc is sufficient to eliminate two atoms of hydrogen from two molecules of hydrogen chloride, but the equation is supposed to represent to the student a process which has actually occurred, and in which he has seen and handled the ingredients; in the face, therefore, of this and of the previous quotation, the decomposition ought to be expressed in molecular formulæ. This is, in fact, done in a subsequent portion of the book, for on page 163 we find the equation $Zn_2+4HCl=2ZnCl_2+2H_2$. We are glad to observe that the author has for the most part adopted Williamson's nomenclature. It is much more satisfactory, as well as more correct, to call a spade a spade. The substances known as prussiate of potash and ammonio-sulphate of copper might or might not have a definite composition—as far as those names teach us; but when we hear of potassium ferrous ferrocyanide and tetr-ammonium cupric sulphate, we have no difficulty in assigning a formula to the compounds they denote.

Following the non-metallic elements, the more important hydrocarbons are described, and then some fifteen pages are devoted to amylaceous and saccharine bodies. The glucosides are most carefully treated, the character, composition, and distinguishing tests of those which are official being minutely entered into. Albuminous bodies such as casein, hœmoglobin and pepsin receive a fair share of attention—and the last chapter concludes with a description of colours and the substances chiefly used as pigments. In his reference to the colouring matters of leaves, and especially to the supposed composition of chlorophyll, the author should not have overlooked the exhaustive researches of Mr. H. C. Sorby, whose wonderful assiduity and patience have completely revolutionised the subject of vegetable chromatology. The acetate of lead process for the estimation of astringent matter in tea, &c., is also wrongly attributed to Mr. Allen; the method was entirely devised by Mr. F. W. Fletcher, and published under his name. We are disappointed at not finding even a reference by Dr. Muter to such now well-established therapeutical agents as propylamine and croton chloral, besides some others of older date. These are, however, minor defects which we shall hope to see remedied in a second edition. The errors of typography are remarkably few, and the author acknowledges in the preface the assistance of Mr. Joseph Ince, who aided him in the revision and correction of proofs. The type is exceedingly clear and well arranged, and the paper and binding leave nothing to be desired. Apart from its educational character, the book will be useful as a work of reference, and should therefore find a place in the pharmacist's library as well as on the bookshelf of the student.

A MEDICAL FORMULARY.*

In a small compass Dr. Kirby has brought together some three or four hundred well-selected formulæ for pills, potions, lotions, and the various other media for the conveyance of the materia medica to the human race. Many of these are recipes from the London hospitals, and to the prescriber the collection can scarcely fail to supply some useful hints, if nothing more. The remarks accompanying each formula, though brief, are useful. The book also contains the formulæ for the various "glyceeols" introduced by Messrs. Kirby & Co., and of which, as elegant and valuable medicinal applications, we have had previous occasion to speak. A selection of formulæ for the rarer forms of medicine, such as baths, inhalations, pessaries, hypodermic injections, and the like, and copies of the diet-tables of the London hospitals, add to the usefulness of the work. The book concludes with a well-arranged double index, referring both to the medicines and to the diseases for which they are intended.

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* *A Formulary of Selected Remedies, with Therapeutic Annotations.* E. A. Kirby, M.D. London: H. K. Lewis.

CONDUCTED BY RICHARD J. MOSS, F.C.S.

HAVING exhausted nearly all the common metallic poisons, as well as the patience of some of our contributors, we intend to introduce a slight variation, and give some analytical exercises which are calculated to cultivate knowledge at once useful and instructive to the pharmacist. We purpose giving our young friends an opportunity for improving their acquaintance with those very important bodies, the alkaloids. We shall begin with morphia and its salts. Unfortunately, it is inconvenient to distribute solutions for examination, so it is necessary to resort to solids. It is our intention to distribute small packets of powdered sugar which may contain a small quantity of opium, or of morphia, either uncombined, or as chloride or acetate. The sugar is simply to be examined with a view to the detection of these substances. If morphia is detected it will be necessary to ascertain the condition in which it exists in the mixture.

It is assumed that those who will attempt this analysis possess suitable text books, so that it is unnecessary at present to refer to the reactions of morphia except for the purpose of assuring students that a practical knowledge of these reactions is quite necessary.

It will probably be found that the sugar (which will be slightly coloured) places some difficulty in the way. Success will greatly depend upon the plan that is devised for the separation of the suspected substances from the morphia. Particular attention is therefore directed to the use of solvents.

Students who wish to compete should send in their names and addresses before the 20th inst. On the 25th we shall forward the samples.

Students' papers will be received up to the 15th of the following month.

Answers.

The last organic mixture contained 1 per cent. of common white arsenic. On a previous occasion (January last) we published the result of the examination of a mixture containing 2·5 per cent. of arsenious anhydride; when, out of a large number of competitors, nearly every one detected the poison. The result is very different on this occasion, for although the number of samples distributed was reduced to a holiday minimum, only a small proportion of papers came to hand, and nearly half of these were failures. Considering that each of the packets contained only a little more than half a grain of the poison, it is no great wonder that the analysis was found difficult.

There is nothing suggested by the papers before us which has not already been the subject of our remarks when the detection of arsenic was previously referred to, except, perhaps, the facility that some of our friends possess for making a number of erroneous observations agree perfectly with one another, and the large amount of evidence that can be adduced in confirmation of an entirely erroneous observation. It is no great matter of surprise to find an error arising from such a circumstance as the colour of a precipitate, for example. But when the error is confirmed by the very tests that should have exposed it, the state of affairs becomes serious. A want of experience will not account for this, except in so far as experience teaches the necessity for honest observation. Every separate test in the course of an analysis ought to form the basis of an independent and unbiassed opinion. However contradictory results may appear, no attempt must be made to gloss over facts for the sake of making things look all right. Nothing makes a greater demand upon straightforward honesty than chemical analysis.

PRIZES.

The First Prize for the best analysis has been awarded to
ROBERT KIRKBY, Ambleside.

The Second Prize has been awarded to
R. H. PARKER (Enitar), 15 Alexandra Place, Barnstaple.

Marks Awarded for Analyses.

R. Kirkby (*1st Prize*)	98
Enitar (*2nd Prize*)	92
W. A. B.	90
F. Williams, Junr.	85
Non Nullus	85
W. Hoskins	70
Vitæ	50
C. W. H.	0
E. C.	0
Spes	0
S. C.	0

TO CORRESPONDENTS.

⁂ All Communications should include the names and addresses of the writers.

Prizes.—The students to whom prizes are awarded are requested to write at once to the publisher, naming the book they select, and stating how they wish it forwarded.

Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.

Any scientific book which is sold for about five shillings may be taken as a second prize.

W. A. B.—A general examination for metallic radicals would have made your paper much more complete. Supposing one of the common copper arsenites to have been the poisonous substance originally contained in the mixture, your method would probably have failed to detect it, for owing to the instability of most of these compounds, the water with which the mixture had been treated would have given indications of the presence of arsenites.

F. Williams, Junr.—You do not state how you arrived at the erroneous conclusion that the cold aqueous solution contained nothing but organic matter. The filtration difficulty is one to be avoided rather than overcome. Cold water ought to have answered the requirements of the case.

Non Nullus.—Your paper exhibits a want of system. It would appear that you had confined your attention exclusively to the examination for arsenic, so that it must be regarded as a fortunate circumstance for you that this was the poison present.

W. Hoskins.—Your result was quite correct; but you may be certain the culprit will not be hung on your evidence. We require a short account of the different operations to which the mixture is subjected.

Vitæ.—You do not appear to possess a practical knowledge of the tests which distinguish arsenious from arsenic compounds. Colour tests are sometimes very deceptive to those who trust entirely to their books.

C. W. H.—You could not expect to detect a small quantity of a tartrate by the odour produced by burning such a mixture as you had to deal with unless your olfactory powers are marvellously developed. Aqueous solutions of plant gluten are rendered cloudy by calcium salts and silver nitrate. This accounts for the reactions attributed to the tartaric radical.

Spes.—It was very remarkable that you should fail to obtain a precipitate with hydrogen monosulphide, and at the same time succeed in obtaining a negative result with Reinsch's test. You must have operated upon an exceedingly dilute solution.

S. C.—Had stannous chloride been mixed with the organic matter you certainly would not have detected it, for it would have undergone decomposition.

H. S. D.—Your paper does not appear in the competition for two reasons. First, you have not favoured us with your name and address; and secondly, you addressed your communication in such a manner that it went to two or three wrong places before it reached us, and then arrived too late. Correspondents in this department are requested to address all their letters to the Editor of THE CHEMIST AND DRUGGIST. They will also please bear in mind that we cannot give them private replies whenever cases of difficulty present themselves.

THE INTERNATIONAL PHARMACEUTICAL CONGRESS.

(FROM A SPECIAL CORRESPONDENT.)

St. Petersburg, August 17 (August 29), 1874.

Scientific gatherings and festivities here have now come to an end. The month of August will long be remembered by those strangers who were visiting the capital of the Russian Empire.

As early as April last the organised committee of the Pharmaceutical Society sent out invitations to all established pharmaceutical societies, informing them that the fourth International Pharmaceutical Congress was to take place this year on August 1 (13) in St. Petersburg; the meetings to be held in the Hotel Demuth. At the same time attention was directed to the following questions to be discussed:—

1. How far does the responsibility of assistants extend in the execution of their duty.
2. How would the commission for the revision of apothecaries' shops be best organised.
3. Is it not necessary that professorships of pharmacy should be held by a pharmaceutical chemist.
4. Is it not time to bring forward an International Pharmacopœia.

The programme arranged for the Congress was as follows:—

Wednesday, July 31 (August 12). Reception of visitors in the morning; in the evening a social gathering.

Thursday, August 1 (13), 10 A.M. First meeting; opening of the Congress; electing and distribution of members in the committees. In the afternoon, meeting of the committee; in the evening social reunion of members.

Friday, August 2 (14), 10 A.M., scientific discussion. Afternoon: Visit to the Mining Institution, the Botanical and Zoological Gardens. Evening: Social reunion in the "Bavaria."

Saturday, August 3 (15), 10 A.M., second meeting; 5 P.M., the banquet.

Sunday, August 4 (16). Inspection of places of note in the morning, and an excursion by steamer to Peterhof (the Versailles of St. Petersburg).

Monday, August 5 (17), 10 A.M. Scientific conversazione and meeting of the committee; in the afternoon, excursion to Czarskoe-Sselo and Pawlowsk.

Tuesday, August 6 (18), 10 A.M. Third and final meeting of the Congress.

Accordingly, on August 1 (13) the fourth International Pharmaceutical Congress was opened by the Director of the Pharmaceutical Society of St. Petersburg, Professor Trapp, who in his speech pointed out that hitherto at all the previous congresses the custom had been observed of choosing a chemist as president, and therefore requested the election of officers.

Dr. von Waldheim, of Vienna, was chosen as President of the Congress.

The Messrs. Madsen, of Copenhagen, and Trapp, of St. Petersburg, as vice-presidents.

As secretaries were chosen the Messrs. Dr. Mehu, of the Société de Pharmacie de Paris, Sutton, of the Pharmaceutical Society of Great Britain, Janauscheck, of the Pharmaceutical Society of Prague, and Rennard, of the Pharmaceutical Society of St. Petersburg.

Twelve different societies were represented by seventeen delegates.

The Congress unanimously agreed that the German language should be adopted throughout the proceedings; and proceeded at once to discuss Question 3 on the programme, leaving the Questions 1, 2, and 4 at present for the deliberation of the committee. After a short discussion as regards Question 3, the following resolution was adopted:—"That it is most desirable the professorship of pharmaceutical faculties should be represented by pharmaceutists, and also, when circumstances permit, that two professorships should be created—one for Materia Medica and one for Pharmaceutical Chemistry."

On August 2 (14) the members were occupied in discussing several questions of scientific interest. Dr. Janecek, of Prague, in a prolonged discourse, brought forward a new theory on the electrolysis of water, and further researches on the electrolytic law. He proposed to discuss on another occasion the laws laid down by Faraday.

Magister* Masing, of Dorpat, then spoke of his researches and investigations of the resins and bitter principles of the species of *Agaricum*. Of the former he analysed and produced four and submitted them to the Congress.

Several other communications were postponed to a future day, as the members had to inspect the Mining Institute and the Botanical and Zoological Gardens.

On August 3 (15) the second meeting took place, and, after the protocol had been read, Mr. Jordan, of St. Petersburg, spoke in reference to Question 1:—"How far does the responsibility of the assistants extend?" &c. After a lengthy discussion the following resolution was adopted: "That the proprietor is responsible for the genuineness of drugs, purity of chemicals and pharmaceutical preparations, as also if, through not conforming to the laws, mistakes should arise, or if an assistant should overstep the laws of the Medical Council to his (the proprietor's) knowledge; but here commences the sole responsibility of the assistant for the mistakes committed by him. The proprietor, or, in his absence, his substitute, is also responsible for the apprentice."

On Sunday, after a visit to the Isaacs' Church, the Cathedral of Kasan, and the Hermitage, an excursion to Peterhof brought that day's proceedings to a close.

The subjects at the scientific meeting on August 5 (17) were opened by Mr. Pœhl, of St. Petersburg, by a paper on cremation, with reference to forensic chemistry. He gave his opinion that by suitable manipulations of spectrum analysis during cremation it would be possible to ascertain whether death had taken place through metallic poisoning.

The second report was furnished by Dr. Godeffroy, of Vienna, who read a paper on "A Few New Double Chlorides of the Alkaline Earths, especially Antimony, Bismuth, and Tin." Experiments made by him have shown material differences in their analogous combinations, differences which can be used with great advantage in the detection of calcium and rubidium.†

Dr. von Waldheim, of Vienna, showed a new method of converting the old medicinal weights into grammes, and intended to write on the subject. The Messrs. Schulz, of Moscow, and Martenson, of St. Petersburg, took leading parts in the discussion which followed.

Mr. Dragendorff, of Dorpat, then proceeded in the name of Magister Günther to explain the latest investigations of the gallic acid found in Bablah (*Acacia Babolah*), which gave corresponding results to the gallic acid in nutgalls, myrabolans, dividivi, and other substances. The analysis and preparation of the drugs were submitted to the council.

Mr. Mann, of St. Petersburg, next explained the pipettes and burettes of his own invention; he also showed some pencils for writing on glass. Lastly he explained some results obtained in the manufacture of gun cotton.

Mr. Dragendorff gave his experience in investigating aloes and its active principles. He contradicted the hitherto received erroneous opinion that the active drastic principle lay in the different aloin modifications, as also in the resin, and tried to prove that the oxy-aloin did not contain it, but that it was contained solely in an amorphous isomeric body produced by boiling the aloin in water. This being the sole principle of the aloes, which is precipitated by tannic acid, it could be used with advantage for the qualitative estimation of the different sorts of aloes.

At the final meeting of the committee on August 6 (18), the second question came on for debate, and was thus settled: "The revision of apothecaries' shops should be executed by two sanitary inspectors duly appointed by the State, of which one, to whom the duty falls to examine the medicaments and the management of the business, should be a practical pharmaceutist, whom it was desirable should be chosen from the body. In cases of difference, recourse should be had to a committee consisting of practical chemists and medical men in equal number."

The fourth question on the programme was in every detail discussed by Dr. Godeffroy, of Vienna, and the following resolution was arrived at:—"The Fourth International Pharmaceutical Congress thinks the time has come to produce an International Pharmacopœia not to the exclusion of National Pharmacopœias, but thinks it would be desirable that in composing new National Pharmacopœias the general principles and preparations of the International should be adopted." A vote of thanks was passed to the Société de Pharmacie de Paris for their projected work of an International Pharmacopœia; and a committee was formed to examine the work performed by the Society, the central seat to be in St. Petersburgh.

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* Master of arts.

† See Chemist and Druggist, April, 1874, p. 119.

The President, Dr. von Waldheim, stated that some American societies were anxious that the next Congress should be held in Philadelphia, but Mr. Greenish, of London, proposed that the fifth Conference should be held in London. The Congress left the place open, and only expressed a desire that it should be held some time within the next five years.

The President then gave a *résumé* of the work of the present Pharmaceutical Congress, and, in an elaborate speech, thanked the committee for its arduous duties and its kind reception, and finally declared the Congress closed.

Mr. Kymenthal, of Moscow, moved, on behalf of all the delegates present, a cordial vote of thanks to the President for the admirable manner in which he had presided over their deliberations.

GERMANY.

BERLIN, August 31, 1874.

THE three new apothekes, concessions for which were granted last year, have been opened in Berlin during the past few weeks. A dispensary has also been opened in connection with the magnificent new hospital of the Friedrichhain. It is erected in the style of a pavilion, and is exclusively for the use of patients in the hospital, and not for the general public.

⁂

A few years ago a case of poisoning by chloral hydrate occurred in a town in Rhenish Prussia, which at the time created great excitement. Physician and chemist were condemned to imprisonment, and soon afterwards a Government order was issued fixing the largest doses to be given. Again, in the same town, a death has occurred from the same substance. A prescription was written, in which the dose of chloral exceeded the maximum quantity. The chemist to whom it was taken refused at first to dispense it, but the doctor insisted, and the patient died an hour after taking the medicine. The magistrate regarded the case as one of poisoning through insufficient care on the part of the doctor, and ordered a *post-mortem* examination. The case is not yet decided. The chemist, however, has been fully exonerated. Most likely the doctor will be also acquitted, as the patient was in the habit of taking considerable quantities of spirits, and in such cases higher doses are necessary, as has been proved in other instances. This case should induce doctors who prescribe chloral hydrate to watch its effects with great care.

⁂

The commission appointed for the purpose of enquiring into the general regulations of the apotheke system has been in session here from August 10th to the 18th, but it is difficult to ascertain what passed at the discussions, as the President insisted on the strictest secrecy. It was altogether a curious affair. Herr Jacobi was at the last moment prevented from taking the chair, and his place was taken by a Councillor of the Education Office, and the first and last sittings were presided over by officials from the Imperial Chancellery. To the members of the commission the affair was also curious: they had hoped to have seen chemists from the smaller towns; instead of that, they met only two Berlin apotheke proprietors, a delegate who was also a chemist, an assistant from the Palace apotheke here, two "provisors," and one apotheker from Magdeburg. And yet every chief town in Germany had been invited to send a representative. Alsace was to send one, but not Lorraine, which created much displeasure and protest.

Altogether, besides chemists, there were, on the commission, professors, physicians, &c., and, in all, thirty members attended. A particularly important discussion took place on the Government examination of the chemists in general, in which it will be found certain antediluvian notions were advocated. The committee, however, only passed their opinion, but made no resolution. A shorthand writer was in attendance, and a report of the proceedings will be published shortly, but for the present the utmost secrecy was requested by the President. One of the members, writing to a newspaper, speaks of the "silence by express desire," which produced a malicious remark from the *Apotheker Press*, whose reporter was first permitted, and then refused, attendance at the proceedings. The general Press took it up, and ridiculed the affair, insinuating also that the members were, as a body, opposed to free trade, and, therefore, wished to keep the affair secret. Articles of this character have appeared in the important journals, such as the *National Zeitung*, the *Kolnischer Zeitung*, and others. The *Bunzlau Pharmaceutical Gazette*, which had made [great preparations to report the proceedings, has been as silent as the rest. We must be content to wait. But it is and will remain a great pity that those interested in the subject should be so unjustly treated. The *Volkszeitung*, however, publishes the following as reliable rumours:—That for the proposal that chemists who had passed their examination might establish themselves where they pleased, there were only seven votes recorded. Should the privilege system cease, the majority will claim money compensation up to A.D. 1,900. One apotheke is to be considered sufficient for 5,000 to 12,000 souls. The heirs of a deceased chemist are to be permitted to continue the business for two years. No chemist is to be the proprietor of two apothekes. Industrial institutions are not to have their own apotheke. Chemists are to be required in serious cases, on a doctor's certificate, to give medicine without payment. Inspections in regard to cleanliness, medicine, apparatus, &c., are to take place twice every six years. Physicians in a place where there is no apotheke may themselves supply medicines. Homœopathic doctors in places where there are homœopathic apothekes are not to dispense themselves. With regard to the sale of privileged apothekes very various opinions were offered.

⁂

Professor Phœbus, of whose new work, "Lebensverhältnisse der heutigen Pharmacie," I have before written, has sent a petition to the Diet, signed by 125 professors of medicine belonging to 19 German universities, asking for Government aid to the lectures on Pharmacy, which are at present but poorly maintained. He particularly points out that, having regard to the many occupations of the physician, it is more than ever desirable that the pharmacist should be enabled to aid him in all chemical, microscopic, and pharmaceutic studies.

Correspondence

DR. DUDGEON'S ADDRESS TO THE HOMŒOPATHIC CONGRESS.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—In your article upon the above address in your August number you have the following remarks:—

"If it proves anything, it proves too much; it indicates that there is a widespread conspiracy on the part of the orthodox part of the profession to keep down what they or their leaders well know to be the 'true truth.' . . . They may agree with the homœopathists to a certain degree as to the medicinal virtues of aconite and belladonna, but that is surely no reason why they should accept the theory which covers and limits and comprehends all homœopathic thought."

Now, that there is a "widespread," or rather universal, "conspiracy on the part of the orthodox members of the profession to keep down" homœopathy and its adherents will scarcely be denied, since it is well known that (1) no "allopathic" publisher is permitted to publish the writings of a homœopathist on any subject whatever; (2) that "allopathic" medical journals are closed to the contributions of homœopathists; (3) that the late Professor Henderson was forced to resign his chair of Clinical Medicine, and all but driven from that of General Pathology, solely on account of his having adopted the doctrines of homœopathy; (4) that the ordinary courtesies of the profession are denied to homœopathists; and (5) that it is contrary to what the allopathists (on the *lucus a non lucendo* principle) call their "etiquette"—and even contrary to the distinct laws of many of their societies—to consult with homœopathists, or even to consult with those who have consulted with homœopathists, and, by consequence, to consult with those who have consulted with those who have consulted with homœopathists, and so on, after the fashion of "the house that Jack built," to the end of the chapter. But we are as yet far from being able to congratulate the allopathists as a body, or any, except, perhaps, a very few of the most enlightened among their leaders, upon having really learned that homœopathy is the "true truth." What we do accuse them of, and with manifest justice, is this, that they sternly forbid any and every illustration of the truth of homœopathy to be referred to the general law to which it appertains, and while they are willing to admit the perfect truth and applicability of the law of similars with regard to any number of individual drugs, they should persist in tabooing all those who have learned that this mode of action is the result of a law, and not an exception or accident. The present position of the allopathists is precisely analogous to that of a society of philosophers, who, having once taken it into their heads to revile Newton and his followers, and to deride the doctrine of gravitation, should deliver the following charge to every neophyte :—

"You are perfectly welcome to teach of any number of bodies—or even of all bodies, individually—that each, if dropped from a height, will, unless prevented, fall to the ground. It does not matter what the bodies are, how many soever, or how similar or dissimilar soever. You are at liberty to proclaim that a block of wood, a lame donkey, an old woman and an allopathic physician, or a fine diamond, a race-horse, a philosopher and a homœopathist will, unless intercepted, fall downwards when dropped from a point above the earth's surface. But if you dare to assert that there is a general law in accordance with which all terrestrial bodies are attracted to the centre of the earth, if you dare to allow any person who holds such a doctrine to write in any scientific magazine to which you are a contributor, if you dare to write in any scientific magazine to which he is a contributor, if you dare to hold a discussion with such a person, or even with any one who has ever held a discussion with him, we will forthwith expel you from our society, deprive you of every shilling of which it shall be in our power to rob you, denounce you to the public as a liar and a cheat, and misrepresent or ignore every argument which you may bring forward in your own defence. If you even dare to mention the name of Newton without accompanying epithets of contempt or hatred, we shall regard you with suspicion, and will take good care you hold no official station in our society."

Now, that this is the attitude assumed by the allopathists towards the homœopathists is irrefragably proved, not only by Dr. Dudgeon in his address, which you rightly characterise as one of "remarkable argumentative ability," but also, though perhaps less forcibly and lucidly, in many previous writings and addresses. If, therefore, the allopathists have learned that the doctrine of homœopathy is "the true truth," it is "the true truth" which they are avowedly, wilfully and knowingly endeavouring to ignore and suppress. If, notwithstanding the numerous instances brought forward in their own text-books, all corroborative of the truth of homœopathy, they are still ignorant of the general law, why does ignorance rashly intrude into the place of knowledge, and presume to judge? Why, when every day is bringing forward new admissions from themselves of the wide applicability of the law, do they not merely themselves refuse to investigate the question of its universality, but vilify and obstruct others who are anxious to undertake the labour of the investigation? Because their grandmothers derided Hahnemann almost as much as the same venerable matrons derided Jenner, or as their great-great-great-great-grandmothers derided Harvey, are they, too, bound to join in the anile cackle in order to maintain the hopeless thesis that their school has never erred? When Hahnemann has extorted from them the palpable and most unwilling concessions of letting their lancets rust in their cases, and their leeches enjoy a passive existence in their native pools; when they have been forced by him to "deal" as "gently" with their time-honoured cathartics as our worthy friend "Mrs. Brown" exhorted her husband to deal with the modicum of water which entered into her "sperritual" potations; when the motley crew of cuppers have been driven to seek other means of support than the blood of their fellow men; why should the allopaths refuse to admit the bare possibility that there may be a grain of truth in the theories of the great practical reformer? If they are not as yet convinced of the truth of Hahnemann's great law, why do they refuse to listen to the teachings of their own experiments in so far as they regard this subject? "Cur nescire, pudens prave, quam discere, malunt?"

No one ever thought for a single moment of maintaining that, because an allopathist may agree empirically with the homœopathists as to the medicinal use of one or two drugs, he is, therefore, bound to accept the whole doctrine of homœopathy; though, when he finds the number of drugs employed in like cases by both schools daily increasing, he might certainly be expected to pause and consider what this unanimity indicated. Of course, it no more follows because a professed allopath has gained a true insight (from whatever source) into the action of aconite and belladonna, that he is, therefore, acquainted with the truth of the universal law which prevails throughout the entire domain of pharmaco-dynamics, than it follows that a school-boy is acquainted with the principles of comparative philology because he has mastered the syntax of the Eton Latin grammar with the aid of the translation at the end of the book. But, notwithstanding the ridiculous anti-corporal punishment mania now raging, I venture to affirm that the schoolboy who, at that stage of his studies, should presume to hold up Max Müller to ridicule (according to the measure of his small abilities), and to denounce all Max Müller's followers as fools or knaves, would richly merit a flogging, and, I hope, would get one. And if, in his maturer years, after he had added Greek, German, French, and Italian to the stock of his slender acquirements, and acknowledged that certain principles are common to the grammars of all these languages, he were still to persist in his boyish vapouring, he would, necessarily, incur one of the three following charges :—Either (1) that of an almost incredible degree of intellectual obtuseness; or (2) that of some personal animosity or envy regarding Max Müller and that accomplished scholar's disciples; or (3) that of being unwilling to recant the errors of his "salad days, when he was green in judgment." Now, this is, so far as it goes, precisely analogous to the position of the allopaths as regards the "homœopathy" controversy. Hahnemann is our Max Müller, and we whose names appear in the "Homœopathic Directory" are the disciples who have followed him, though, in most cases, alas! with faltering and unequal steps. The leaders of the "advanced school" of (allopathic) medicine of some years ago correspond to the presumptuous and "vapulable" schoolboy—if I may be permitted to coin a very questionable word. But the said leaders of the present day have made, at least, equal advances on the acquirements of their predecessors to those which I have supposed the above-mentioned youth to have achieved beyond the crude attainments of his nonage. It is no longer merely a question of aconite and belladonna, but of these drugs in addition to arsenic. ipecacuanha, iodide of potassium, nux vomica, bichloride of mercury, cantharides, croton oil; colocynth, podophyllum, hepar sulphuris, the characteristic actions of alkalies and acids in general, hamamelis, lead, &c.—the list might be indefinitely extended did time and space permit. The law of similars is acknowledged by the leading allopaths themselves to hold good as to the pharmaco-dynamics of the above and many other drugs—at least, in so far as any law whatever can be traced in their mode of action—and, in fact, as regards the action of every drug in succession, as each in turn becomes the subject of careful experiment. The cardinal doctrines of the school of Hahnemann are two :—(1) that drugs ought to be proved upon the healthy body; and (2) that which is expressed by the well-known formula, *similia similibus curantur*. The first of these doctrines is now universally admitted; the second is admitted as regards a host of drugs, and not positively denied as to any. But we have a further hold upon the allopaths beyond that of the bare enumeration of drugs which they employ in the same cases as we do. In the instances of iodine and some of its salts, of hepar sulphuris, of ipecacuanha, and many others, Professor Ringer enumerates in the list of toxic symptoms just the very symptoms he afterwards mentions as amenable to their control—thus showing that in these instances, at least, there is no mere empirical coincidence in the practice of members of the antagonistic schools, but that the more enlightened allopaths are aware that the pharmaco-dynamics of the above drugs are, so far as they go, true illustrations of the operation of the law of similars. Dr. Burness goes a step further, and all but enunciates the law itself—though in different words. Yet even in the writings of Drs. Ringer and Burness, neither the honoured name of Hahnemann, nor the word "homœopathy," once occurs. Whatever I may have formerly thought or said, I have now no wish to censure Dr. Ringer, at least for this omission. He is, unfortunately, *nolens volens*, bound by the penal laws of the trades-union to which every physician not a professed homœopathist necessarily belongs. Were it not for this, I, for one, make no question but that Dr. Ringer would feel the sincerest pleasure in giving honour where he so well knows that honour is due, and in doing ample justice to the sagacity of the old physician who, more than sixty years ago, enunciated the general law which Dr. Ringer has himself verified in so many of its details. I believe that Dr. Ringer could and would face with perfect equanimity the loss of his professorship, which would be the inevitable consequence of the slightest reference to Hahnemann on his part, but he has another and a higher end in view than that of apportioning to any individual his share of praise or blame. Writing, as I feel well assured Dr. Ringer does, for the benefit of his fellows, and not to support the pretensions of any particular medical clique, he justly feels himself entitled to use such reticence as may be necessary in order to procure acceptance for his doctrines among the prejudiced and fanatical mob of those who arrogate to themselves the title of "orthodox" practitioners. While thus seeking to "do good," even, if necessary, "by stealth," I am sure Dr. Ringer would be the first to "blush to find" the "fame" due to another awarded to himself. But Dr. Ringer, like other reformers, may find it needful to bide his time, and meanwhile to content himself with such half truths as alone his contemporaries are prepared to receive, leaving the acceptance of "the truth, the whole truth, and nothing but the truth," to a future generation, which shall be more familiar with the doctrine of homœopathy than this present generation, of which he is so distinguished an ornament. If the part of Erasmus was less heroic than that of Luther, it was at least no less useful.

All things considered, therefore, it appears to me no wild hypothesis, but an evident fact, that the "orthodox" school of medicine is, as a body, straining every nerve to repress the overt expression of a law which its most eminent leaders are daily seeing to be of wider, if not of universal prevalence. In the face of all this party spirit, prejudice, and persecution, openly to profess adherence to a comparatively small and despised community requires (in men of already high reputation, which is at once forfeited by such a profession) no common degree of heroism, and even those possessed of a sufficient measure of the heroic spirit to dare the adventurous step may consider that the time for ringing the bold challenge upon the shield of prescriptive error has not yet arrived. Hence, though I would now be far from casting the imputation of disingenuousness upon individuals, I contend that there is ample evidence of that "widespread" (or rather all but universal) "conspiracy" which the writer in your August number so confidently ignores.

Your obedient servant,
W. B. A. Scott, M.D. Edin.

6 Calverley Parade, Tunbridge Wells:
August 23, 1874.

THE GENEROSITY OF THE HALIFAX CHEMISTS.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

Sir,—Trusting to your known desire to give publicity to trade grievances, we have ventured to forward you a surmise of the treatment received by those who try to better their condition. A few weeks ago the assistants and apprentices of the chemists of this town forwarded a petition to the Association, and a circular to each chemist, asking to close at 7 instead of 8 o'clock P.M. during the winter months. On the deputation canvassing the chemists they were told that three of their number had resolved to resist the movement, and thus stop all endeavours to literary progress. Can you conceive of such unjust tyranny and selfishness in this age of progress and wealth? What will their fellow-tradesmen in this town who were in favour of the scheme say? How will neighbouring towns look upon them? Is it to be handed down to future generations that three chemists of Halifax were so void of regard for the education of their apprentices that out of base selfishness they refused them an extra hour per day for study? Even the poor ignorant gutter lads of London would repudiate the thought.

Hoping these gentlemen may recover their proper senses once more,

I remain, yours faithfully,
Justitia.

Halifax.

LEGAL & MAGISTERIAL.

EMBEZZLEMENT AT LIVERPOOL.

Two assistants of Messrs. Evans, Sons & Co., of Hanover Street, Liverpool, were charged at the Liverpool Police Court, on August 27, with embezzlement. These two, named Bache and Stout, had supplied patent medicines to a Mr. J. Thompson, a patent medicine dealer, and the money had been received from him, but not in all cases accounted for. It transpired that Messrs. Evans had expressly forbidden the supply of goods to Thompson for the reason that he had undersold them; he, however, had induced Bache and Stout to supply him under a false name, and it was stated that some of the goods had been supplied under trade price. The prisoners pleaded guilty, and the magistrate, after passing a severe censure on Thompson, sentenced Stout to six months' imprisonment with hard labour, and Bache, who was his junior and who appeared to have been merely the tool of Stout, to one mouth's imprisonment with hard labour.

PROSECUTION OF A CHEMIST AND DRUGGIST UNDER THE ADULTERATION ACT.

They have a singularly wise clerk of petty sessions at Hyde, Cheshire, unless the local newspaper does him an injustice. A certain Captain Arrowsmith bought some red precipitate from Mr. Samuel Booth, a chemist there, and soon after summoned him for supplying him with an adulterated article. The clerk is reported to have told the defendant that he (defendant) was bound to prove that his article was pure, and that Captain Arrowsmith was not bound to prove it adulterated! The captain, however, in the fulness of his generosity, tendered as evidence a certificate from the county analyst to the effect that the precipitate contained "five parts per cent. of oxide of lead." The gallant captain, who it seems can scarcely serve his country sufficiently, did not wish to press for a heavy penalty, but only wanted to protect the public. The defendant, who at first had boldly pleaded "not guilty," now seemed to begin to realise the blackness of his crime. He said he was very sorry. He had been in business above thirty years, and he had never had any complaints before. He should be on his guard in future. The Bench said it was possible that the precipitate powder was as defendant received it, but it must be understood that it was the duty of all people who sold drugs and other things which concerned the health of the inhabitants to know beforehand that they were pure. The case was dismissed on defendant's promising to pay the costs.

PROSECUTION UNDER THE PHARMACY ACT.

Mr. George Day, builder, contractor, and licensed victualler, of Farringdon Road, Clerkenwell, was recently summoned before Mr. Arnold, by Mr. Elias Bremridge, Secretary of the Pharmaceutical Society of Great Britain, for unlawfully selling oxalic acid without affixing the name and address of the seller to it. Mr. Flux, solicitor to the society, stated that the defendant was not a certified person to sell poisons. The defendant admitted that he was the owner of a chemist's shop two or three doors from where he resided, and it was not denied that his servant had sold some oxalic acid. The parcel that contained the poison had not the defendant's name and address on it, but that of a Mr. Hawes, and the address, Exmouth Street, Clerkenwell. Mr. Arnold said no doubt the defendant had infringed the provisions of the Act of Parliament, but not with a fraudulent intention. He would bind over the defendant to come up for judgment when called upon.

IS CARBOLIC ACID A NUISANCE?

Messrs. Bowdler & Bickerdike, chemical manufacturers, of Oswaldtwistle, were summoned last month by the Local Board of that place for causing a nuisance. The alleged nuisance arose, it appeared, from the manufacture of carbolic acid. A number of witnesses gave evidence on either side, some finding the effluvia injurious to their health, and others enjoying it. The defendants succeeded in proving that the drainage of the district was defective, and, as it could not be asserted from which cause the noxious vapours emanated, the magistrates ultimately concluded to dismiss the case without costs.

THE BLOOD PURIFIERS.

A certain "Dr." Clarke, of High Street, Shoreditch, who sells a medicine called Dr. Clarke's Blood Renovator, was prosecuted on the 9th inst., at the Worship Street Police Court, by the Inland Revenue Commissioners, charged with having removed the stamp from a bottle of the Lincoln Mr. Clarke's "World-famed Blood Mixture," and having carefully written his own name over it, placing the stamp on one of his own bottles of medicine, and exposing the same for sale. This was proved by Mr. Clarke of Lincoln, and admitted by the defendant. He was fined by Mr. Flowers 10*l*., being half the penalty, and the lowest fine which the magistrate might inflict. Mr. Salaman, on the part of Mr. Clarke, Lincoln, then applied for a summons against the defendant for infringement of his rights, which was at once granted.

Obituary.

Burrows.—August 5, Mr. B. L. Burrows, Chemist and Druggist, of Norwich.

Cadby.—July 17, Mr. John P. Cadby, Chemist and Druggist, of Margate.

Cooper. — July 29, Mr. Sedgwick Hodgkinson Cooper, Chemist and Druggist, of West Hartlepool.

Durden.—July 11, Mr. Robert Durden, Chemist and Druggist, of Fulham Road, London.

Elkington.—July 11, Mr. Walter T. W. Elkington, Chemist and Druggist, of Leicester.

Ford.—July 4, Mr. W. H. J. Ford, Chemist and Druggist, of Shiffnal.

Harrison.—July 29, Mr. Joseph James Harrison, Chemist and Druggist, of Market Harborough.

Muriel.—July 30, Mr. Henry Brooke Muriel, Pharmaceutical Chemist, of Wentworth Street, Brighton.

Noble.—August 8, Mr. George Noble, Chemist and Druggist, of Hull.

Savory.—August 27, at his residence, Lancaster Gate, Mr. Chas. H. Savory, of the firm of Savory & Moore, aged 44.

Smith.—August 1, Mr. Joseph Steele Smith, Chemist and Druggist, of Westminster.

Trade Memoranda.

The London Depot of Cauvet's Capsules has been removed from 109 Hatton Garden to 238 Blackfriars Road. Mr. P. Lauranson is the agent.

The Daughter of the late John Bond's Marking Ink is now supplied in 3*d*. bottles, as well as 6*d*. and 1*s*. The 3*d*. bottles are supplied on cards.

Messrs. Brown & Polson, the famous makers of Corn Flour, have removed their London offices to 101 Queen Victoria Street, E.C.

We have been shown some very handsome and comfortable-looking chest preservers, made by Messrs. Bourne & Taylor from Polish rabbit skins.

We may refer purchasers of chemical apparatus and scientific instruments to the announcements of Messrs. A. & M. Zimmermann, of Fen Court, Fenchurch Street, and Mr. M. Jackson, of Barbican, London, who have excellent stocks.

The failure of George Batty, trading as Batty & Co., has been announced. The debtor is the proprietor of the widely-known "Nabob" pickle and "Nabob" sauce, on the advertisement of which he has spent several thousands of pounds. The debts amount to 30,000*l*. (10,000*l*. secured). The assets, chiefly stock-in-trade, were said to be considerable.

We are informed that Mr. H. B. Condy has commenced an action against the Condy's Fluid Company to prevent what he regards as the unwarrantable use of his name. The action will probably be tried early next term. The question to be decided is a curious one. Dr. Mitchell, as until recently partner with Mr. Condy, and now one of the partners in the Condy's Fluid Company, claims that he has as much right in the property of Condy's Fluid as Mr. Condy himself.

Notwithstanding the almost numberless novelties in spray producers which have been brought out during late years, Messrs. S. Maw, Son & Thompson have found it possible to introduce one with a manifest improvement. The novelty consists in the adaptation of a telescope tube, by which construction the odorator may be applied to a bottle of almost any size, and no matter how low down the liquid may lie. An illustration of this new odorator will be found in our advertisement pages.

The Autumn Manœuvres to take place this year in Roumania are expected to be on a very grand scale. Several thousand men, principally infantry, will be employed, and in order that their health may not be impaired by the impurities of the water peculiar to the rivers of the united principalities of Moldavia and Wallachia, we learn that the Government have sent to England, to the Silicated Carbon Filter Company, for a supply of their pocket filters, similar to those supplied to the British troops engaged in the Ashantee war. It will be remembered that these filters gave the greatest satisfaction, but since the recent conflict on the West Coast of Africa we hear that the company have made several improvements in the manufacture of their filters, and these improvements will be effected in the number to be supplied to the Roumanian Government. As evidencing the good opinion held of these filters, we may also add that an Eastern Government is in treaty for a large number.—*European Mail*, Sept. 9, 1874.

Court of Bankruptcy.—In re Garman & Garman.—The debtors, John Stephen Garman and Cornelius Edwin Garman, of 27 Roman Road, North Bow, and Appian Place, Old Ford, chemists and druggists, have presented a petition for liquidation; and Mr. W. R. Brooks, on September 2, applied to Mr. Registrar Murray for the appointment of Mr. F. J. Sharp, auctioneer, 16 Abchurch Lane, as receiver, and for an interim injunction staying further proceedings at the suit of the executors of the late Thomas P. Glaskin, who had commenced an action for the recovery of 25*l*. 4*s*., and were in a position to sign judgment and issue execution. Other proceedings had also been instituted, and it was necessary that the estate should be protected. The property consisted of stock to the value of 100*l*., certain trade fixtures and furniture, also book debts amounting to about 250*l*. His Honour thought it was unnecessary to make any order. Notice should be given to the suing creditors of the commission of an act of bankruptcy, and if, after such notice, the proceedings were continued, the application might be renewed.

Druggists' Sundries.

Success, says Josh Billings, does not consist in never making blunders, but in never making the same one a second time.

A "Pharmacien" of Paris has been condemned to pay a fine of 500 francs for selling pastilles of calomel without a physician's prescription.

A singular suicide occurred at Droitwich recently. A middle-aged man named Richard Smith, formerly a chemist in London, went to that town to see his sister, who at one time kept the Wheat Sheaf Inn, but found that she had left the town. He slept at the inn that night, and next morning poisoned himself by taking strychnine. Papers in his possession showed that he was in straightened circumstances.

Waterproofing Linen.—Professor Kuhr gives the following directions for this purpose: Pass the linen first through a bath of one part of sulphate of alumina in ten parts of water, then through a soap bath, of which the soap is prepared by boiling one part of light coloured rosin and one of crystallised carbonate of soda with ten parts of water until the rosin is dissolved. The rosin soap thus formed is to be separated by the addition of one-third of common salt. In the soap bath the rosin soap is dissolved, together with one part of soda soap, by boiling it in 30 parts of water. From this bath pass the articles finally through water, then dry, and calender. Made-up articles may be brushed with the solutions in succession and be rinsed in the rain. Wooden vessels may be employed.

The "Daily Telegraph" on Soda Water.—Criticising the recent "revelations" of Dr. Lankester in respect to soda water, the *Telegraph* has an amusing but sensible article, in which it remarks that "for a lengthened period that much-enduring seeker after knowledge, 'the merest schoolboy,' has been, we apprehend, aware that in ordinary soda-water there is scarcely any soda at all; that it does not profess to contain soda, which is cheap enough in all conscience, but which possesses a flavour disagreeable to a multitude of palates; that when quiescent it is entirely tasteless; and that its effervescence is due to its being mechanically impregnated with fixed air, or with carbonic acid gas. In a soda-water factory, where there are machines capable of making 300 dozen a day, the 'plant,' the bottles, the corks, the wires, the strings, and the labels are everything; the material is scarcely worth mentioning. Thus it may seem somewhat late in the day for so eminent a medical authority as Dr. Lankester to come forward in his capacity of Medical Officer and Public Analyst of the Parish of St. James's, and solemnly inform the public that soda water is virtually destitute of soda. 'The liquid,' he remarks, 'is sold in bottles'—it is certainly not vended in casks, or dispensed in uncovered mugs like the curds and whey in St. James's Park—'and is professedly an imitation of some natural springs which contain a certain quantity of carbonate of soda and carbonic acid.' This was the case 50 years ago; but for a very long time soda-water has been as avowedly an artificial production as lemonade and ginger beer, and it does not profess to imitate anything, save—when the cork is removed—the Grandes Eaux of Versailles on a very small scale. The sage public analyst of St. James's made an examination of half-a-dozen of soda water purchased from chemists, druggists, and publicans; and he found that none of the selected samples contained a residuum of ten grains per bottle, that various other salts besides soda were held in solution, and that in some of them there was a considerable quantity of organic matter. The conclusion at which he arrived was that 'none of these fluids were genuine mineral waters'—they no more profess to be mineral than mushrooms profess to be mutton chops—and that the only thing they contained in tolerably certain quantity was carbonic acid gas. Upon this conclusion the public analyst of St. James's and 'the merest schoolboy' may cordially join hands; but we may add that had Dr. Lankester analysed 150,000 bottles of soda water he would have arrived at about the same conclusion. Schweppe's soda water is said, we know not with what amount of truth, to contain a few more grains of carbonate of soda than the other preparations; but everybody—except, apparently, Dr. Lankester—is aware that soda water is not patronised because it contains soda or salt, but because it is effervescent, and a draught of it quenches for a time the thirst, and stimulates for a few seconds the whole nervous system."

Revised Terms.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the Publisher of the Chemist and Druggist, and all correspondence relating to it must be addressed to the "Publisher of the Chemist and Druggist, Colonial Buildings, Cannon Street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

FOR DISPOSAL.

1 pair hollow blue-tinted eye preservers in snap case—have not been used. Retail, 10*s.* 6*d.* What offers? 33/239.

Dispensing scales, mahogany stand, with drawer, slide lift. Cost 25*s.* 6*d.* Price 14*s.* Sheldrake, Keighley.

Two hundred gross good phial corks (small). What offers or exchange? Kay, Chemist, Stainland.

Water bed and pillow (by Macintosh), 48 by 36. Butland, Chemist, Exeter.

A new letter press, with book, brush, &c. Cost 3*l.* No reasonable offer refused. 23/238.

Proctor's "Pharmacy," new, 8*s.* 6*d.*; Bateman's "Magnacopia," 2*s.* 6*d.* 13/239.

"Year Book of Pharmacy," first four volumes—1870 to 1873—unsoiled, 18*s.* 15/239.

Acton "On the Reproductive Organs," fifth edition, quite new. L. F. M., 7 Back Lane, Bradford.

Bentham's "British Flora," 1,295 original drawings, 2 vols., octavo, cloth, perfectly new, uncut, 31*s.* 6*d.* (published, 3*l.* 10*s.*), last edition. 30/239.

Four gross 4 oz. bottles; also 1 gross of 10 oz. to 20 oz. bottles, second-hand; all clean, good as new. Apply to J. W. Dewhirst, Chemist, 95 King Street, Huddersfield.

Squire's "Companion to the British Pharmacopœia of 1867." Fifth edition, 4*s.* 6*d.* Graham's "Domestic Medicine." Eighth edition, 6*s.* 7/241.

Set Clendon's tooth instruments by Maw, in mahogany brass bound box; 17 pairs forceps, key, and gum lancet. Grose, Chemist, Swansea.

"The Microscope," by Carpenter; handsome soda water stand; 2 cwts. pumice stone. Offers. Particulars on application. 14/241.

Electric bell, suitable for shop, laboratory, warehouse, &c., in polished case; 100 feet of covered wire, push and constant battery, full directions, 16*s.* E. H. Jones, Monmouth.

Camera and lens, fitted with diaphrams, sliding body, with nitrate bath, lowest price, 2 guineas—carriage paid. R. F. Dickie, St. George's, Wellington, Salop.

Sir J. E. Smith's "English Flora," 4 vols. (1826), uncut, binding good (published at 2*l.* 8*s.*), for 12*s.* 6*d.*, cash. H. Halstead, Rawtenstall.

Translation of "Pharmacopœia Londinensis," 2*s.* 6*d.*, also Creak's "Complete Dictionary of Cæsar," quite new, 2*s.* Address, W. Brown, 22 St. Leonard Street, Edinburgh.

A wall case, in 3 divisions, with projecting sponge drawer and wing glass cases underneath, the upper part supported on carved pillars; height, 8 feet 10 inches by 6 feet 6 inches wide, price 18*l.* Botham, 180 Bury New Road, Manchester.

Four handsome window brackets, packed, 30*s.*; 2 mahogany perfume stands with mirrors, as Maw's Fig. 55, 4*l.*; 39 pill tiles, various, 8 feet by 8 feet, 16*s.* Macdonald, Chemist, Newington, Edinburgh.

Polished mahogany cabinet, 17 × 13 × 12, with drawer underneath, locks, keys, &c. Suitable for a chemical or specimen chest. Cost 30*s.*; will take 20*s.* James Ellis, Kingston Crescent, Portsea.

Cheap dispensing bottles, flat and oval, about 30 gross, 3, 4, 6, and 8 ozs., at 8*s.* 6*d.* a gross; a few 12 ozs. at 12*s.*; 16 ozs., 15*s.*; also several gross of odd bottles, chipped and lettered, at 5*s.* Andrews, Eastbourne.

For 48*l.*, complete soda plant. Hand or power, including machine with large new condenser, pressure gauge, water gauge, Bramah pump, and bottling machine. Will produce 150 doz. per day. 29/239.

Five 6-gallon pear-shaped carboys. One extra large, handsomely labelled, specie jar and glass cap, almost new. Mahogany stands for same. Hempsted & Co., St. Leonards.

A Goodall's grinding mill, equal to new; a large iron mortar and pestle, and a large marble mortar. H. J., Burgess, Willows & Francis, Wholesale Druggists, 10 High Holborn, W.C.

"Elements of Pharmacy," by Loscher. Cooley's "Latin Grammar," "Materia Medica," "The Chemist," by J. and C. Watts, in four vols., Criel's "Chemistry," 3 vols. J. Garforth, Sheffield.

Two mahogany bent-glass counter cases, in good condition; also dispensing screen, with ornamental tablet and show-case in front—all to be had cheap. Bailey, Chemist, 105 Regent's Park Road.

Wightman's printing press, to print 9 inches by 7 inches, including 2 lbs. of type, type case, ink, ink roller, slab, composing stick, quoins, furniture, reglet, and leads. All complete, and quite new. Price 30*s.* F. Williams, 55 King Henry's Walk, N.

"Cæsar," books i. to viii., with notes, in one volume, 1*s.* 8*d.*; Botany, Grindon's "Pathway," 10*d.*; Lindley's "Elements," 5*s.* 6*d.*; Linnæus's "System of Nature," 15*s.*; published at 5*l.* 5*s.* The lot, carriage paid, for 22*s.* H. Waddington Thornton, Bradford.

Gold-labelled stoppered shop bottles, 50 quarts, 13*s.* dozen; 50 pints, 10*s.*; 40 8-oz., 8*s.*; 10 30-oz. labelled blue syrups for 15*s.*; blue earthenware shop pots, gold labels, 24 8-oz. at 7*s.*; 24 4-oz. at 30*s.*; one new pill machine, 14*s.*; 2, 5*s.* and 7*s.*; 8 show carboys, 1 to 4 gallons, 55*s.*; 4 specie jars, 40*s.* Bowles, Chemist, Bedminster, Bristol.

Mahogany-top counter with moulding and trusses in good preservation, 21 feet, in three pieces; mahogany enclosure for window, 10 feet long; mahogany desk with glass case front; 2 3-gallon carboys; 2 3-gallon cylinders; 3 pair of scales; nest of small drawers about 3 feet 4 inches by 2 feet 6 inches, 24 drawers. 522 Kingsland Road.

A very handsome mahogany and plate glass show-case, 6 feet by 4 feet, about 5 feet high, with large drawers with plate glass fronts for sponges, perfumery cases at ends, and bent glass lift-up lids at sides, with marble slab in centre. Price, 40*l.* Apply to Mottershead & Co., 7 Exchange Street, Manchester.

Four gross paraffin chimneys of the best clear glass and finest quality of various sizes, 14*s.* per gross, crates free, cost 18*s.* Twenty-three 12-yard rolls paraffin wick, assorted large sizes, at 9*d.* per roll. 21 40-oz. stoppered bottles; 39 20-oz. ditto; 33 15-oz. ditto; 43 8-oz. ditto; 39 4 oz. ditto; in all 176, stoppered, wide and narrow-mouthed, of white glass and labelled, for 4*l.*, including packages. Gibson, Chemist, Gower Street, Birmingham.

Bargain. Two counters, baywood tops, black and gold fronts; 3 upright polished cases; 1 cigar case, polished, in 6 divisions; 4 flat counter cases; 4 pair scales, iron weights, brass weights; 2 iron mortars; 13 glass jars, large and small; 116 stoppered bottles; 6 wooden show bowls; 8 inches by 3 inches Wedgewood jars; 8 inches by 1 inch blue jars; 2 nests small painted drawers, 72 inches by 30 inches respectively; 1 painted show stand, 3 tier; 4 large show globes. Price 25*l.* F. Johnson, Chemist, Prestwich, Manchester.

Post free, "B. P.," 1867, 4*s.* 6*d.*; Attfield's "Chemistry," 1867, 8*s.* 6*d.*; Piesse's "Perfumery," 5*s.*; Orr's "Sciences, Practical Chemistry," 5*s.* 6*d.*; Cottle's "Human Physiology." 3*s.* 4*d.*; Lardner's "Animal Physiology," 2*s* 3*d.*; Pilcher's "Diseases of the Ear," 4*s.* 6*d.*; Dr. Barr Meadows "On Eruptions," 1*s.* 6*d.*; Conolly's "Lunatic Asylums," 2*s.* 6*d.*; Clutterbuck's "Pyrexia," 2*s.* 6*d.*; Parkins' "Epidemic Diseases," 2*s.* 6*d.*; Guthrie's "Compound Fractures, &c.," 1*s.* 6*d.*; Schmitt "On Cancer," 1*s.*; Coote's "Syphilis," 3*s.* 6*d.*; Adams' "Anchylosis Hip Joint," 2*s.*; Vogel's "Pathological Anatomy," 100 plates, 8*s.* 6*d.*; Quain's "Anatomy, 1842," 4*s.* 6*d.*; Basham "On Dropsy," 3*s.* 6*d.*; Blakiston's "Chest Diseases," 3*s.* 6*d.*, carriage not paid; Cooper's "Dictionary of Surgery," 2 vols., 1872, 25*s.*; Miller's "Chemistry," 3 vols., 30*s.*; "Gazetteer of the World," 7 vols., 5*l.*; Rees' "Cyclopædia," 45 vols., calf gilt, good copy, 8*l.* 8*s.* "Chemist," Church Street, Hadleigh, Suffolk.

Stock of a wholesale druggist: 1½ cwt. pulv. rhei, E. I., opt., 3*s.*, second, 1*s.* 4*d.* per lb.; 1 cwt. pulv. jalap, V. C., 1*s.* 4*d.* per lb.; 80 lbs. pulv. myrrh, E. I., opt., 1*s.* 6*d.* per lb.; turc. opt., 3*s.* 6*d.* per lb.; 14 lbs. pulv. antim. tart., 1*s.* 6*d.* per lb.; 56 lbs. rad. rhei, E. I., 2*s.* per lb.; 28 lbs. rad. jalap, V. C., 1*s.* 2*d.* per lb.; ½ cwt. camomiles, 5*d.* per lb.; ½ cwt. gum acaciæ, turc., alb. parv., 1*s.* 2*d.* per lb.; 1 cwt. aloes, Barb., 1*s.* per lb.; ½ cwt., aloes, Socot., 1*s.* 6*d.* per lb.; 28 lbs. aloes, Cape, 4½*d.* per lb.; 20 lbs. pulv. Scillæ, 10*d.* per lb.; 28 lbs. Irish moss, 2½*d.* per lb.; 28 lbs. Island moss, 3*d.* per lb.; 50 lbs. gum benzoin, 1*s.* per lb.; 12 lbs. sem. cardam. min., 4*s.* 6*d.* per lb.; 35 lbs. red precipitate, 6*s.* per lb.; 24 lbs. calomel, 5*s.* 9*d.* per lb.; 24 lbs. potass. iodid., 10*s.* 6*d.* per lb.; about 5 cwt. Fol. sennæ, tin, 6*d.*, 5*d.*, 4*d.*, and 3*d.* per lb.; 14 lbs. sang. dragon, 1*s.* 6*d.* per lb.; 4 lbs. indigo, 4*s.* 6*d.* per lb.; 1 lb. strychnia crystals, 5*s.* 3*d.* per oz.; 2 lbs. argent. nit. crystals, 3*s.* 2*d.*; sticks, 3*s.* 5*d.* per oz.; 40 lbs. castor oil, unbleached, 5½*d.* per lb.; 12 lbs. oil rosemary, opt. 2*s.* 6*d.*; second, 1*s.* 9*d.* per lb.; 20 ozs. finest oil rose geranium, 2*s.* 3*d.* per oz. Lloyd Rayner, 309 New North Road, Islington, N.

5 gross gold-labelled shop bottles, 40, 32, 20, 16, 10, 8, 6, 4 oz., 14*s.*, 13*s.*, 12*s.*, 9*s.*, 8*s.*, 7*s.* 6*d.*, 7*s.*, 6*s.* 6*d.*, 6*s.* per dozen; 8 dozen 4, 2, ½, ¼ lb.; new blue shop jars, gold labelled, 34*s.*, 21*s.*, 9*s.* 7*s.* per dozen; 60 fine new blue syrup bottles, plug stoppered, gold labelled, 20, 40 oz., 21*s.*, 30*s.* per dozen; 2 handsome specie jars, 26 inches high, with glass enamelled covers, scroll gold labelled, 75*s.*; new mahogany ebonised bent plate glass show case, Maw's Fig. 104, 8 feet long, 16 inches wide, 12 inches high, with silvered glass doors to open at back, 10*l.* 10*s.*; new mahogany show stand, Maw's Fig. 85, 30*s.*; mahogany wall case, with cupboard, under 9 feet high, 31 inches wide, 75*s.*; mahogany bent glass case, Maw's Fig. 41, 45*s.*; one ditto, 3 feet 9 inches long, 8 inches high, 8 inches wide, Fig. 16, 65*s.*; new upright mahogany show case, as Treble's 67, 2 feet 2 inches long, 1 foot 11 inches high, 50*s.*; one ditto, similar to Treble's 74, 45*s.*; mahogany desk, fitted with drawers, &c., 25*s.*; six nests mahogany gold-labelled shop drawers, 190*s.*, 115*s.*, 90*s.*, 40*s.*, 37*s.*, 30*s.*; Maw's 2-dozen 5-grain pill machine, marble slab, 17*s.* 6*d.* Lloyd Rayner, 309 New North Road, Islington, London.

WANTED.

Lamp for shop front. 17/239.

Small iron printing press. Marlar, Halstead.

A nest of drawers and shelving counters, &c. 36/239.

A rotary pill machine. An outside druggist's lamp. 19/241.

One largest swan-neck carboy; 2 largest specie jars. Hempsted & Co., St. Leonards.

A fern stand, about 27 inches by 12 inches, and proportionate height. F. Clifton, Derby.

Eighteen 3 or 4 lb. blue or white ointment pots, not exceeding 11½ inches high. Ching and Wise, Launceston.

Six pounds of quicksilver for same quantity of finest deep vermilion. X., 54 High Street, Stroud.

Fresh specimens of the more important indigenous medicinal plants. "Botanist," Great Horton, Bradford.

"Pharmaceutical Journal," July to December, 1872, inclusive. State lowest price. Kemp, 33 Drapery, Northampton.

Flat counter case, cheap; state particulars. Sheldrake, Keighley.

Strong cylindrical tin or galvanised iron cistern, with large brass tap; good condition; capacity 200 gallons. Heald, Sleaford.

A dental operating chair, in good condition. State price and particulars. J. Potts, chemist and dentist, Seaham, Durham.

Three oil cisterns, to hold 36 gallons each; iron and tin; second hand. Bell-metal mortar; moderate size; second hand. Half-gallon tincture press, as Fig. 2 Maw's; tin water bath, Fig A.; second hand. Two plain show jars, as Fig. D. 14/239.

French Putty, discovered by Reuben, of Paris, is prepared as follows: 7 lbs. of linseed oil are boiled for about two hours with 4 lbs. of brown umber, after which 2 ozs. of finely cut wax are added; the mixture is removed from the fire, and 5½ lbs. prepared chalk and 11 lbs. of white lead are well incorporated. This putty is said to be very durable, and can be used on frames without oiling them previously.—*American Journal of Pharmacy.*

TRADE REPORT.

The Board of Trade returns for August show a worse figure in comparison with 1873 than any month this year. The difference in the declared value of our national exports between August 1873 and August 1872 is 2,153,578*l.* In the former month the amount reached 22,657,334*l.*, while in the latter period it only touched 20,503,756*l.* The total falling off for the year up to August 31, compared with 1873, is 11,924,263*l.* Against this gloomy report we have to place the certainty of a good harvest both in England and also, what is more important as far as prices are concerned, in the great grain-producing countries of the world.

The statistical abstracts of the Board of Trade recently published show that the imports of foreign and colonial merchandise into the United Kingdom in 1873 were of the value of 371,287,372*l.*, and the exports of the produce of the United Kingdom 255,164,603*l.*, making a total trade of the value of 626,451,974*l.* The imports show an increase of 16,593,748*l.* over the preceding year, the exports a decrease of 1,092,744*l.*; the total increase being 15,501,004*l.* This statement does not include exports from this country of foreign and colonial merchandise, nor the imports and exports of the precious metals, which adjust the balance of trade, nor mere trans-shipments. It shows our import of merchandise and our export of our own products, and the countries from which the one and to which the other were shipped.

September so far gives no indication of reversing the tide of dulness which has evidently set in; trade in all departments is quiet, and transactions are generally small. Some speculation has occurred on the drug markets in respect to camphor, and China has thereby considerably improved its position. We pointed out last month that there was every probability of a considerable advance, and our prediction was almost immediately verified. Sales have been made at regularly advancing prices, from 72*s.* 6*d.*, at which it then stood, to 85*s.*, at which it is now firm. Japan is not quoted just now, but we are informed that some considerable cargoes are approaching, and will shortly be placed on the market.

Our readers will not be surprised to find another pound on the price of quicksilver per bottle, and an advance on mercurials generally of 3*d.* per lb. There is abundant reason to expect higher prices still, and we shall not expect a change until Spanish affairs take a little more hopeful turn. How this consummation is to be effected is, perhaps, beyond any mortal intelligence.

Oxalic acid, which is a very representative chemical, is now remarkably firm, and considerable orders have been booked for it both for immediate and forward delivery. In respect to most of the staples, we are told that manufacturers are very rigid in their adherence to quoted prices—a state of things which contrasts well with their pliable condition of recent months.

Iodine has dropped still lower, and is now cheaper than it has been known for years. Increased production, we believe, is the main cause of this position.

Large arrivals of castor oil have tended to depress the market, and prices have ruled in favour of buyers.

The quarterly sales of cinnamon have established a respectable advance, especially for high qualities.

There have been but small transactions in olive oil, and these have been scarcely at former quotations. There can be no doubt that all the olive crops of Italy are likely to be both abundant and good, and we may anticipate a cheap year.

Turpentine is again cheaper, consequent on large arrivals.

Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mincing Lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

CHEMICALS.	1874.					1873.				
ACIDS—	s.	d.		s.	d.	s.	d.		s.	d.
Acetic ....per lb.	0	4	to	0	4½	0	4	to	0	0
Citric .... ,,	4	4	..	0	0	4	5	..	4	6
Hydrochlor......per cwt.	5	0	..	7	0	4	0	..	7	0
Nitric ....per lb.	0	5	..	0	5½	0	5	..	0	5½
Oxalic .... ,,	0	7	..	0	0	0	7	..	0	7½
Sulphuric ...... ,,	0	0¾	..	0	1	0	0¾	..	0	1
Tartaric crystal.. ,,	1	7½	..	0	0	1	7¼	..	1	7½
powdered ,,	1	7½	..	0	0	1	7½	..	0	0
ANTIMONY ore ......per ton	200	0	..	240	0	220	0	..	240	0
crude .. per cwt.	0	0	..	0	0	0	0	..	0	0
regulus .. ,,	0	0	..	0	0	0	0	..	0	0
star...... ,,	46	0	..	47	0	57	0	..	58	0
ARSENIC, lump ...... ,,	20	0	..	20	3	20	0	..	20	6
powder.... ,,	10	0	..	0	0	10	0	..	0	0
BRIMSTONE, rough ...per ton	127	6	..	145	0	127	6	..	145	0
roll .. per cwt.	9	9	..	10	0	9	9	..	10	0
flour.... ,,	11	6	..	12	6	11	6	..	12	6
IODINE, dry ....per oz.	0	8½	..	0	0	1	3	..	0	0
IVORY BLACK, dry .. per cwt.	8	6	..	0	0	8	6	..	0	0
MAGNESIA, calcined..per lb.	1	6	..	0	0	1	6	..	0	0
MERCURY ....per bottle	460	0	..	0	0	300	0	..	0	0
MINIUM, red ...... per cwt.	25	0	..	25	3	25	3	..	25	6
orange .. ,,	37	0	..	0	0	35	6	..	0	0
PRECIPITATE, red . per lb.	7	0	..	0	0	4	11	..	0	0
white ,,	6	11	..	0	0	4	0	..	0	0
PRUSSIAN BLUE .. ,,	0	0	..	0	0	0	0	..	0	0
SALTS—										
Alum ....per ton	170	0	..	175	0	167	6	..	165	0
powder...... ,,	185	0	..	0	0	187	6	..	0	0
Ammonia:										
Carbonate ...... per lb.	0	7	..	0	7¼	0	7½	..	0	7¾
Hydrochlorate, crude, white .... per ton	640	0	..	0	0	650	0	..	0	0
British (*see* Sal Am.)										
Sulphate........ per ton	360	0	..	370	0	355	0	..	360	0
Argol, Cape ......per cwt.	90	0	..	98	0	87	0	..	96	6
Red........ ,,	76	0	..	86	0	75	0	..	86	0
Oporto, red. ,,	32	0	..	33	0	32	0	..	32	6
Sicily ...... ,,	53	0	..	58	0	60	0	..	65	0
Ashes (*see* Potash and Soda)										
Bleaching powd...per cwt.	11	9	..	12	0	12	0	..	12	3
Borax, crude...... ,,	40	0	..	66	0	50	0	..	90	0
British refnd. ,,	70	0	..	0	0	102	6	..	90	0
Calomel ....per lb.	6	6	..	0	0	4	6	..	0	0
Copper:										
Sulphate ....per cwt.	26	0	..	27	0	30	6	..	31	0
Copperas, green..per ton	65	0	..	70	0	60	0	..	62	6
Corrosive Sublimate p. lb.	5	8	..	0	0	3	9	..	0	0
Cr. Tartar, French, p. cwt.	117	6	..	120	0	112	6	..	112	6
brown ,,	102	0	..	105	0	95	0	..	100	0
Epsom Salts ....per cwt.	5	9	..	6	6	5	9	..	6	3
Glauber Salts .... ,,	4	6	..	5	9	4	6	..	5	6
Lime:										
Acetate, white, per cwt.	14	0	..	21	0	14	6	..	21	0
Magnesia: Carbonate ,,	42	6	..	45	0	42	6	..	45	0
Potash:										
Bichromate ....per lb.	0	6½	..	0	0	0	8½	..	0	0
Carbonate:										
Potashes, Canada, 1st sort ......per cwt.	34	0	..	34	6	35	9	..	36	0
Pearlashes, Canada, 1st sort ......per cwt.	44	6	..	45	0	47	6	..	0	0
Chlorate ......per lb.	0	10½	..	0	11	1	3	..	1	3½
Prussiate .... ,,	0	0	..	1	1	1	3½	..	0	0
red .... ,,	2	10	..	2	11	2	10	..	2	11
Tartrate (*see* Argol and Cream of Tartar)										
Potassium:										
Chloride......per cwt.	7	0	..	0	0	8	0	..	9	0
Iodide ....per lb.	11	0	..	0	0	22	0	..	0	0
Quinine:										
Sulphate, British, in bottles ......per oz.	8	0	..	0	0	9	3	..	0	0
Sulphate, French ,,	7	9	..	0	0	9	3	..	0	0
Sal Acetos ......per lb.	0	10	..	0	10½	1	0	..	0	0
Sal Ammoniac, Brit. cwt.	44	0	..	45	0	44	0	..	45	0
Saltpetre:										
Bengal, 6 per cent. or under ......per cwt.	21	6	..	22	0	25	6	..	26	3
Bengal, over 6 per cent. per cwt.	19	6	..	21	3	23	6	..	25	3
British, refined ,,	25	9	..	26	6	29	0	..	29	6
Soda: Bicarbonate, p. cwt.	15	6	..	15	9	18	0	..	0	0
Carbonate:										
Soda Ash ..per deg.	0	2¼	..	0	0	0	2¾	..	0	0
Soda Crystals per ton	112	8	..	0	0	122	6	..	0	0
Hyposulphite, per cwt.	0	0	..	0	0	15	6	..	16	0
Nitrate ......per cwt.	11	3	..	11	9	15	0	..	15	3
SUGAR OF LEAD, White cwt.	45	0	..	0	0	48	0	..	0	0
SUGAR OF LEAD, Brown, cwt.	38	6	..	39	0	32	6	..	33	0
SULPHUR (*see* Brimstone)										

	1874.					1873.				
	s.	d.			d.	s.	d.			d.
VERDIGRIS .... per lb.	1	1½	to	1	6	1	1½	to	1	6
VERMILION, English ,,	6	3	..	6	5	4	6	..	4	8
China ,,	5	6	..	6	0	4	3	..	4	4

DRUGS.

	1874.					1873.				
ALOES, Hepatic ....per cwt.	80	0	..	200	0	80	0	..	200	0
Socotrine .. ,,	102	6	..	240	0	110	0	..	320	0
Cape, good.. ,,	38	0	..	40	0	30	0	..	34	0
Inferior .... ,,	32	0	..	37	0	16	0	..	28	0
Barbadoes .. ,,	50	0	..	200	0	80	0	..	2?9	0
AMBERGRIS, grey........oz.	0	0	..	0	0	27	0	..	40	0
BALSAM—										
Canada............per lb.	2	0	..	3	0	3	0	..	3	6
Capivi .... ,,	2	8	..	2	9	2	11	..	3	1
Peru .... ,,	8	0	..	8	1	8	9	..	0	0
Tolu.............. ,,	2	9	..	3	0	1	10	..	2	0
BARKS—										
Canella alba......per cwt.	16	0	..	27	0	15	0	..	25	0
Cascarilla .... ,,	18	6	..	31	0	30	0	..	35	0
Peru, crown & grey per lb.	0	10	..	2	7	1	0	..	2	10
Calisaya, flat ,,	2	10	..	4	4	3	0	..	3	9
,, quill ,,	2	9	..	4	5	3	3	..	5	0
Carthagena ,,	0	8	..	2	0	0	10	..	1	8
E. I. .... ,,	0	7	..	5	0	0	4	..	4	6
Pitayo ...... ,,	0	4	..	2	0	0	6	..	2	2
Red .... ,,	1	3	..	3	10	1	10	..	6	0
Buchu Leaves........ ,,	0	2	..	1	0	0	1½	..	0	9
CAMPHOR, China ..per cwt.	82	6	..	0	0	72	6	..	0	0
Japan .. ,,	0	0	..	0	0	80	0	..	0	0
Refin. Eng. per lb.	1	1	..	0	0	1	6	..	0	0
CANTHARIDES........ ,,	3	0	..	5	0	6	4	..	6	6
CHAMOMILE FLOWERS p. cwt.	50	0	..	84	0	45	0	..	80	0
CASTOREUM ....per lb.	4	0	..	20	0	6	0	..	20	0
DRAGON'S BLOOD, lp. p. cwt.	105	0	..	245	0	105	0	..	240	0
FRUITS AND SEEDS (*see also* Seeds *and* Spices).										
Anise, China Star per cwt.	130	0	..	140	0	135	0	..	140	0
Spanish, &c. ,,	12	0	..	27	0	20	0	..	42	0
Beans, Tonquin....per lb.	1	6	..	2	4	3	7	..	3	9
Cardamoms, Malabar good .... ,,	4	4	..	5	1	4	6	..	5	6
inferior.... ,,	2	7	..	4	3	3	3	..	4	3
Madras.... ,,	3	6	..	3	11	2	2	..	4	6
Ceylon .... ,,	4	6	..	4	9	4	3	..	4	6
Cassia Fistula....per cwt.	20	0	..	21	6	10	0	..	20	0
Castor Seeds .... ,,	5	0	..	10	0	5	0	..	10	0
Cocculus Indicus ,,	14	0	..	17	0	13	0	..	20	6
Colocynth, apple ..per lb.	0	4	..	0	10	0	4	..	0	9
Croton Seeds ....per cwt.	42	0	..	44	0	45	0	..	54	0
Cubebs.......... ,,	25	0	..	0	0	23	0	..	24	0
Cummin .... ,,	15	0	..	22	0	18	0	..	26	0
Dividivi .... ,,	11	0	..	15	0	11	0	..	15	0
Fenugreek ...... ,,	8	0	..	16	0	9	0	..	25	0
Guinea Grains .. ,,	25	0	..	26	0	25	6	..	26	6
Juniper Berries ,,	9	0	..	10	6	9	0	..	10	6
Nux Vomica.. .. ,,	9	0	..	15	0	10	0	..	17	6
Tamarinds, East India ,,	10	0	..	13	0	5	0	..	20	0
West India, new ,,	11	0	..	17	0	15	0	..	30	0
Vanilla, large .... per lb.	68	0	..	86	0	70	0	..	80	0
inferior ,,	45	0	..	67	0	35	0	..	67	0
Wormseed per cwt.	0	0	..	0	0	0	0	..	0	0
GINGER, Preserved, per lb.	0	5½	..	0	8	0	6	..	0	9
HONEY Chili .... per cwt.	32	0	..	46	0	34	0	..	41	0
Jamaica ,,	33	0	..	45	0	25	0	..	40	0
Australian ,,	38	0	..	48	0	22	0	..	40	0
IPECACUANHA .... per lb.	3	6	..	4	4	3	0	..	4	4
ISINGLASS, Brazil.. ,,	2	10	..	5	4	2	9	..	4	10
Tongue sort ,,	3	2	..	5	5	3	2	..	5	0
East India ,,	1	1	..	4	8	1	9	..	4	0
West India ,,	5	3	..	5	9	4	6	..	5	0
Russ. long staple	8	6	..	13	0	8	0	..	12	6
,, inferior	4	0	..	8	0	3	6	..	7	6
,, Simovia	3	3	..	5	0	2	6	..	4	6
JALAP, good...... ,,	0	8	..	0	8¾	1	6	..	2	0
infer. & stems ,,	0	6	..	0	7¾	1	0	..	1	4
LEMON JUICE .... per degree	0	2¾	..	0	0	0	2¾	..	0	0
LIME JUICE........per gall.	2	3	..	2	10	1	11	..	2	3
LIQUORICE, Spanish per cwt.	40	0	..	70	0	50	0	..	90	0
Liquorice Root ,,	11	0	..	16	0	10	6	..	15	0
MANNA, flaky ......per lb.	2	6	..	3	0	2	6	..	3	3
small ...... ,,	1	2	..	1	5	1	4	..	1	6
MUSK, Pod..........per oz.	20	0	..	41	0	20	0	..	40	0
Grain........ ,,	42	6	..	55	0	53	0	..	58	0
OILS (*see also separate list*)										
Almond, expressed per lb.	0	11	..	0	0	1	0	..	0	0
Castor, 1st pale.... ,,	0	4¾	..	0	5¾	0	5¾	..	0	0
second .... ,,	0	4¾	..	0	4½	0	5	..	0	5¼
infer. & dark ,,	0	4	..	0	4¼	0	4¾	..	0	4½
Bombay (in casks)	0	4¾	..	0	0	0	4¾	..	0	0
Cod Liver ...... per gall.	3	10	..	6	3	4	6	..	6	0
Croton .... per oz.	0	3	..	0	4	0	3	..	0	4
Essential Oils:										
Almond ....per lb.	25	0	..	26	0	30	0	..	0	0
Anise-seed ...... ,,	8	6	..	0	0	10	3	..	0	0
Bay ....per cwt.	0	0	..	0	0	65	0	..	70	0
Bergamot ...... per lb.	10	0	..	23	0	9	0	..	18	0
Cajeput, (in bond) per oz.	2	3	..	2	5	2	4	..	2	5
Caraway........per lb.	5	3	..	6	0	5	6	..	6	3
Cassia .... ,,	4	8	..	4	9	5	11	..	6	0
Cinnamon ......per oz.	0	8	..	7	6	1	0	..	5	0
Cinnamon-leaf .. ,,	0	2½	..	0	2¾	0	2	..	0	3¼
Citronelle ...... ,,	0	1¾	..	0	0	0	1¾	..	0	2
Clove ....per lb.	9	6	..	0	0	5	3	..	5	6
Juniper .... ,,	1	10	..	2	0	1	3	..	2	4
Lavender ......per lb.	1	10	..	5	0	1	10	..	5	6
Lemon.......... ,,	7		..	14	0	8	6	..	15	0

	1874.		1873.	
Essential Oils, *continued*:—	s. d.	s. d.	s. d.	s. d.
Lemongrass ....per oz.	0 2½	0 2¾	0 3	0 0
Neroli .... ,,	0 4	0 6	0 5	0 6
Nutmeg .... ,,	0 7¾	0 8	0 8	0 8½
Orange..........per lb.	8 0	10 0	8 0	11 0
Otto of Roses....per oz.	15 0	22 0	15 0	0 0
Patchouli ...... ,,	2 9	4 0	3 9	4 0
Peppermint:				
American ....per lb.	20 6	21 6	15 0	15 6
English ...... ,,	29 0	32 0	29 0	34 0
Rosemary ...... ,,	1 4	1 10	1 4	1 10
Sassafras ...... ,,	2 0	3 0	2 6	3 8
Spearmint ...... ,,	6 0	18 0	6 0	19 0
Thyme.......... ,,	1 9	2 0	1 10	0 0
Mace, expressed ..per oz.	0 3	0 3½	0 2	0 3
Opium, Turkey ......per lb.	33 0	36 0	24 0	27 0
inferior ...... ,,	14 0	29 0	12 0	20 0
Quassia (bitter wood) per ton	70 0	85 0	70 0	90 0
Rhubarb, China, good and fine ....per lb.	2 1	5 9	2 7	5 6
Good, mid. to ord. ,,	0 7	2 0	0 9	2 5
Dutch trimmed ,,	0 0	0 0	8 0	10 0
Russian .... ,,	0 0	0 0	0 0	0 0
ROOTS—Calumba..per cwt.	12 0	16 0	10 0	18 0
China .... ,,	18 6	20 0	16 0	18 0
Galangal.......... ,,	20 0	25 0	18 0	29 0
Gentian .... ,,	17 0	19 0	18 0	19 0
Hellebore .... ,,	30 0	33 0	30 0	33 0
Orris .... ,,	30 0	70 0	36 0	80 0
Pellitory.......... ,,	38 0	39 0	38 0	39 0
Pink ....per lb.	1 0	1 3	0 10	1 0
Rhatany.......... ,,	0 5	0 11	0 5	1 4
Seneka............ ,,	3 0	3 6	4 6	5 0
Snake .... ,,	1 4	1 9	1 2	1 3
Saffron, Spanish .. ,,	22 0	26 0	20 0	25 0
Salep ....per cwt.	170 0	200 0	170 0	180 0
Sarsaparilla, Lima per lb.	0 6	0 9	0 6	0 7
Para.............. ,,	1 0	1 3	1 3	0 0
Honduras .... ,,	1 3	1 7	1 1	1 8
Jamaica .... ,,	1 6	2 4	1 11	2 4
Sassafras ....per cwt.	13 0	15 0	0 0	0 0
Scammony, Virgin ..per lb.	25 0	30 0	26 0	31 0
second & ordinary ,,	8 0	24 0	14 0	25 6
Senna, Bombay .... ,,	0 1	0 5	0 2	0 5
Tinnivelly .... ,,	0 1½	1 0	0 2¾	1 6
Alexandria........ ,,	0 3¼	1 5	0 4	1 10
Spermaceti, refined ,,	1 3	1 4	1 6	0 0
American .... ,,	1 0	1 1	1 2	1 3
Squills............ ,,	0 1¾	0 3¾	0 1½	0 3

GUMS.

	1874.		1873.	
	£ s.	£ s.	£ s.	£ s.
Ammoniaci drop .. per cwt.	4 15	6 17/6	4 0	6 10
lump.. ,,	3 0	4 10	2 10	4 0
Animi, fine washed ,,	11 0	12 0	11 0	13 10
bold scraped ,,	10 0	11 0	9 0	11 0
sorts ...... ,,	6 0	9 10	5 0	10 0
dark ...... ,,	5 0	5 15	4 0	4 15
Arabic, E.I., fine pale picked .. ,,	3 0	3 12	3 0	3 10
srts.,md.tofin. ,,	1 17	2 18	2 10	3 0
garblings .. ,,	1 2	1 10	1 0	3 0
Turkey, pick.gd.to fin. ,,	7 10	11 0	7 10	11 0
second & inf. ,,	4 0	7 5	4 0	6 10
in sorts .. ,,	2 5	3 15	2 0	3 10
Gedda .... ,,	1 0	1 12/6	1 0	2 0
Barbary, white .. ,,	1 6	2 3	2 10	2 17
brown .. ,,	1 5	1 16	1 10	2 0
Australian...... ,,	1 15	2 8	1 7	2 5
Assafœtida, em. to fin. ,,	1 7	2 16	1 3	3 0
Benjamin, 1st & 2nd ,,	12 0	27 0	8 10	24 0
Sumatra 1st & 2nd ,,	7 0	10 0	7 10	10 10
3rd ,,	3 5	4 5	3 10	4 5
Copal, Angola red ,,	5 10	5 15	6 0	6 15
Benguela ,,	3 10	3 12/6	5 10	5 15
	s. d.	s. d.	s. d.	s. d.
Sierra Leone, per lb.	0 4½	0 10½	0 3	0 9½
Manilla....per cwt.	9 0	19 0	13 0	28 0
Dammar, pale .... ,,	40 0	50 0	47 0	50 0
Singapore .... ,,	40 6	50 0	43 0	48 0
Euphorbium .... ,,	11 0	15 0	11 0	15 0
Galbanum .... per lb.	1 6	2 0	1 6	2 0
Gamboge, pckd. pipe per cwt.	180 0	280 0	220 0	300 0
Guaiacum ....per lb.	1 0	2 5	0 8	2 6
Kino..............per cwt.	50 0	90 0	50 0	85 0
Kowrie, rough .. ,,	23 0	34 0	12 0	26 6
scraped sorts ,,	34 6	50 0	30 0	39 0
Mastic, picked ....per lb.	4 6	6 0	6 0	7 0
Myrrh, gd. & fine per cwt.	119 0	280 0	120 0	240 0
ord. to fair.... ,,	80 0	115 0	40 0	110 0
Olibanum, p. drop ,,	62 0	68 0	70 0	77 0
amber & ylw. ,,	54 0	61 0	60 0	70 0
garblings.... ,,	23 0	39 0	20 0	40 0
Senegal .... ,,	2 15	3 3	3 5	3 10
Sandarac........ ,,	85 0	100 0	50 0	95 0
Shellac, Orange.. ,,	265 0	300 0	192 0	202 6
Liver .. ,,	250 0	280 0	185 0	190 0
Thus .... ,,	23 0	24 0	20 0	35 0
Tragacanth, leaf ,,	240 0	360 0	270 0	440 0
in sorts ,,	30 0	170 0	60 0	160 0

OILS.

	1874.		1873.	
	£ s.	£ s.	£ s.	£ s.
Seal, pale ....per tun	35 10	0 0	34 0	0 0
yellow to tinged ,,	32 0	34 10	32 0	33 0
brown ...... ,,	25 0	29 0	30 0	31 0
Sperm............ ,,	100 0	102 0	0 0	0 0
Cod .... ,,	39 0	0 0	36 0	0 0
Oils, *continued*:—	£ s.	£ s.	£ s.	£ s.
Whale, South Sea, pale, per tun	30 0 to	0 0	34 10 to	0 0
yellow ,,	28 0	29 0	33 0	33 10
brown ,,	22 0	23 0	30 0	31 0
East India, Fish ,,	25 0	0 0	26 10	0 0
Olive, Galipoli ...per ton	47 0	0 0	44 0	0 0
Triesto...... ,,	45 0	0 0	42 0	0 0
Levant .... ,,	40 0	41 0	39 0	40 0
Mogador .... ,,	40 0	40 10	38 0	38 0
Spanish .... ,,	44 0	45 0	41 0	0 0
Sicily ...... ,,	43 0	0 0	41 0	0 0
Cocoanut, Cochin.. ,,	41 0	0 0	38 0	38 10
Ceylon ,,	34 0	35 0	32 0	32 10
Sydney ,,	29 0	35 10	28 0	32 0
Ground Nut and Gingelly:				
Bombay	0 0	0 0	0 0	0 0
Madras	35 0	36 0	36 10	0 0
Palm, fine...............	36 0	37 0	37 0	0 0
Linseed	26 10	0 0	32 10	0 0
Rapeseed, English, pale ..	30 15	31 0	36 0	0 0
brown	28 15	29 0	34 0	0 0
Foreign, pale ..	0 0	0 0	38 0	0 0
brown	0 0	0 0	0 0	0 0
Cottonseed	26 0	26 5	28 10	29 0
Lard	52 0	56 0	42 0	0 0
Tallow	20 0	30 0	29 0	0 0
Turpentine, American, cks.	23 3	0 0	31 9	0 0
French ,,	0 0	0 0	0 0	0 0
Petroleum, Crude	0 0	0 0	0 0	0 0
	s. d.	s. d.	s. d.	s. d.
refined, per gall.	0 9½	0 0	1 1¾	0 0
Spirit ,,	0 9	0 0	0 8½	0 9

SEEDS.

	1874.		1873.	
Canary............per qr.	88 0	90 0	46 0	54 0
Caraway, English per cwt.	0 0	0 0	38 0	42 0
German, &c....	0 0	0 0	70 0	94 0
Coriander	10 0	13 0	13 0	19 0
Hemp..............per qr.	40 0	42 0	40 0	44 0
Linseed, English per qr. ..	59 0	66 0	58 0	68 0
Black Sea & Azof	55 0	56 0	58 0	60 0
Calcutta ,,	58 0	0 0	61 0	62 0
Bombay ,,	59 0	0 0	62 9	63 0
St. Petrsbrg. ,,	54 0	55 0	55 0	57 0
Mustard, brown..per bshl.	10 0	15 0	13 0	16 0
white.. ,,	8 0	11 0	8 0	9 0
Poppy, East India, per qr.	57 0	0 0	60 0	60 6

SPICES.

	1874.		1873.	
Cassia Lignea ..per cwt.	56 0	65 0	75 0	80 0
Vera .... ,,	24 0	60 0	27 0	60 0
Buds .... ,,	112 6	117 6	117 6	120 0
Cinnamon, Ceylon:				
1st quality ......per lb.	2 4	4 0	1 8	3 6
2nd do. .... ,,	1 9	3 5	1 6	3 0
3rd do. .... ,,	1 3	3 0	1 2	2 9
Tellicherry ...... ,,	3 3	3 5	2 7	3 0
Cloves, Penang .... ,,	2 0	2 1	1 0	1 2
Amboyna .... ,,	1 4	1 4½	0 7½	0 11
Zanzibar.......... ,,	1 4½	1 5	0 8	0 9
Ginger, Jam., fine per cwt.	105 0	200 0	100 0	250 0
Ord. to good .... ,,	66 0	100 0	62 0	98 0
African .... ,,	50 6	52 6	51 0	0 0
Bengal............ ,,	42 0	55 0	50 0	0 0
Malabar .... ,,	49 0	51 0	50 0	0 0
Cochin .... ,,	72 0	110 0	60 0	120 0
Pepper, Blk, Malabar, per lb.	0 7⅛	0 7½	0 7⅝	0 8
Singapore .... ,,	0 7⅛	0 0	0 7⅛	0 0
White Tellicherry ,,	1 4	1 10	2 0	0 0
Cayenne .... ,,	1 6	2 2	1 0	2 0
Mace, 1st quality .. ,,	3 2	3 8	3 5	4 0
2nd and inferior .. ,,	2 0	3 1	2 10	3 4
Nutmegs, 78 to 60 to lb.	3 6	4 7	3 2	4 5
90 to 80 ,,	3 4	3 6	3 0	3 1
132 to 95 ,,	2 11	3 3	2 7	2 11
Pimenta	0 3	0 3⅛	0 2¾	0 0

VARIOUS PRODUCTS.

	1874.		1873.	
COCHINEAL—				
Honduras, black ..per lb.	1 11	2 10	2 3	3 4
,, silver .. ,,	2 0	2 4	2 4	2 7
,, pasty .. ,,	1 9	1 11	2 1	2 3
Mexican, black .... ,,	1 8	2 1	2 3	2 5
,, silver.... ,,	1 8	1 9	2 1	2 2
Teneriffe, black .. ,,	2 0	3 8	2 3	3 9
,, silver .. ,,	1 11	2 2	2 2	2 5
SOAP, Castile......per cwt.	33 0	34 0	33 0	34 0
SPONGE, Turk. fin. pkd pr lb.	12 0	16 0	12 0	16 0
Fair to good ,,	4 0	11 0	4 0	11 0
Ordinary .. ,,	1 0	3 6	1 0	3 6
Bahama .... ,,	0 6	3 6	0 6	3 6
TERRA JAPONICA—				
Gambier ......per cwt.	25 3	25 6	26 6	27 0
Free cubes .... ,,	35 0	42 0	35 0	36 0
Cutch .... ,,	22 6	23 0	21 0	23 0
WOOD, Dye, Bar ..per ton	£5 0	£0 0	£3 10	£4 0
Brazil, Branch .... ,,	18 0	27 0	27 0	30 0
,, Logs ...... ,,	9 0	16 0	9 0	16 0
Cam.............. ,,	22 0	30 0	12 0	25 0
Fustic, Cuba ...... ,,	8 10	9 0	8 10	9 10
Jamaica .... ,,	6 0	7 0	5 5	6 5
Logwood, Campeachy,,	9 5	9 10	8 10	9 0
Honduras ...... ,,	6 15	6 17/6	6 15	7 0
St. Domingo .... ,,	5 2/6	5 10	5 5	5 15
Jamaica .... ,,	5 2/6	5 7/6	4 10	5 0
Lima, first pile .... ,,	12 0	14 0	10 0	11 10
Red Sanders .... ,,	6 7/6	6 15	5 17/6	6 0

Notes and Queries

J. J.—Essence of Rennet.—Take fresh rennet, cut small, 12 ozs., common salt, 3 ozs.; knead together and set aside in a cool place for 6 weeks; then add water, 18 ozs., proof spirit, 2 ozs.; digest for 24 hours and afterwards filter. The essence may then be left colourless, or burnt sugar may be added *q.s.*

J. H.—Re Exchange Column.—You should give us more definite particulars if you expect us to investigate the matter.

Minor.—(1) We think Lescher's "Elements of Pharmacy" would perhaps answer your purpose. (2) With regard to your soft corns, we should advise you to bully your bootmaker rather than consult him. No doubt corns and bunions result from badly fitting boots. The following respecting the treatment of corns is from a recent lecture at St. Bartholomew's by Sir James Paget:—"Well-made and nicely-adapted boots are of the first importance. Plasters to prevent friction should be worn, *as long as fashion says that boots must be worn tight.* For the complete cure the corn should be cut. This corn-cutting is a most dexterous art when well practised, but when a corn is badly cut, great harm is done. The ordinary corn-cutters merely shave the layers of the epidermis down level with the surface; but skilful ones, or chiropodists, as they call themselves, will fairly dig the corn out with a sharp instrument, so as to leave the cutis underneath clear, the corn having been previously rendered soft by being soaked thoroughly for a few nights before. A fair method of treatment consists in applying caustics at night, such as nitric acid, and scraping off the epidermis in the morning. Soft corns may be treated thus as well as hard ones. They are only soft because they grow in moist places, as between the toes. A good way of treating them is to put on some soft soap at night, and to rub it off in the morning."

H. J. C.—There is no law in England to prevent anyone from selling drugs with the exception of those poisons and poisonous substances named in the Schedule of the Pharmacy Act. Of course, in such a case as that you mention, the injured person may bring an action against the person selling the medicine, and if he can prove culpable ignorance or carelessness to the satisfaction of a jury he will get damages.

Emplastrum.—Mr. Proctor, in his lectures on Practical Pharmacy, gives an example of a compound plaster, of which the ingredients were emp. bellad., emp. picis, and pulv. camph. He recommends the belladonna and pitch plasters to be melted on a tin plate, and the camphor stirred in with as little heat as possible.

H. G. R.—We think Cooley's Cyclopædia, published by Churchill (28*s.*), is the best. A cheaper, but not much less useful, book is Beasley's "General Receipt Book" (6*s.*, same publishers).

Oleum Ricini.—Various means have been devised to discern the purity or impurity of oils, and also to measure their fluidity and lubricating power; but though they can be compared, it is almost impossible to discern the exact sophistication. A very simple test is to agitate two parts of the oil with one part of nitrate of mercury in a glass tube, afterwards adding a few drops of sulphuric acid and noting the changes. This is the test which is usually sold under a variety of names. When three parts of olive oil are heated in a steam bath with a mixture of three parts of nitric acid of 40° and one part of water, the pure oil becomes clearer, and of a lighter yellow colour; if there is cotton seed oil in it, it will be red.

Omega.—1. Dr. Ruddock's "Homœopathic Vade Mecum" (Homœopathic Publishing Company, 5*s.*), would be a useful work for your friend, whether he chooses to adopt the "similar" system or not. That, with one of the handbooks which usually accompany a medicine chest (which he ought also to have), would be about all he need trouble himself about. Messrs. Lippincott, of Philadelphia, publish a useful cheap handbook of the kind called "The Family Adviser," by Dr. Hartshorne, price 75 cents. 2. Blaine's "Veterinary Art" (Longmans, 18*s.*) is a useful book, but we think its instructions do not extend to pigs. We do not know a good book on the medical treatment of those interesting pets. Beasley's "Druggists' Receipt Book" (Churchill, 6*s.*) would, perhaps, contain sufficient veterinary information for your purpose, and you would find it a useful book of receipts also. Oliver's "Botany" (Macmillan, 4*s.* 6*d.*). We are not acquainted with a work referring particularly to the botany of Canada.

A.B.G.—CEMENT FOR GLASS unaffected by spirit of wine. Put in a mortar 2 parts of nitrate of calcium, 20 parts powdered gum arabic, 25 parts of water. Paint the surfaces to be united and bind together until dry.

Cheveux.—The golden hair fluids, including the one you name, were proved by Mr. Henry Matthews, F.C.S., in a series of analyses undertaken for this journal in our March number, 1869, to consist of a very weak solution of nitro-hydrochloric acid. The proportion is usually 10 or 12 minims of the Pharmacopœia dilute acid to a fluid ounce of water.

Damon (Boston, U.S.).—The following formula is generally used for lime cream glycerine:—

Ol. Amygdalæ Dulc.	℥xvi.
Aq. Calcis	℥viii.
Tinct. cantharides	ʒj.

Perfume according to means and fancy. If very conscientious add ℥i. glycerine, but it will not improve your preparation.

G. W. T.—See answer to Damon.

Mr. J. Davies.—We are obliged for your information, which, however, it would be legally libellous to publish. The gentleman referred to has already indicated his eagerness for victims.

Fidelio will find a formula for "Indian Brandee" in our February "Notes and Queries." If he had had the politeness to conform to our request that correspondents will give in their names and addresses we should have been gracious enough to reprint the formula for his convenience. We are avenged.

C. G. P. (Philadelphia).—The following are the formulæ you ask for:—

Syrup. Ferri et Manganesi Phosph.

℞ Ferri Phosph. 72 grs.
Manganesii Phosph. 48 grs.
Aquæ Destill.
Acid. Phosphoric. (sp. gr. 1·5) āā ℥i.
Syrup. ℥x.

Rub the powders with the acid and filter into the syrup.

(The phosphate of manganese is made in the same way as phosphate of iron, substituting sulphate of manganese for sulphate of iron).

Syrup. Ferri et Quiniæ et Strychniæ Phosph.

℞ Ferri Phosph. 192 grs.
Quiniæ Phosph. 96 grs.
Strychniæ, 3 grs.
Aquæ Destill. ʒvij.
Acid. Phosphoric. (sp. gr. 1·5) ʒx.
Syrup. ℥x.

Rub the phosphate of iron with ʒv. of the water in a glass mortar; dissolve the strychnia and quinia in the acid previously with remainder of water, and filter into the syrup.

Syrup. Ferri et Manganesii et Quiniæ Hypophosph.

℞ Ferri Hypophosphit. ʒi.
Manganesii Hypophosph. 40 grs.
Quiniæ Sulph. 80 grs.
Acid. Sulph. Dil. q.s.
Aquæ Destill. ʒiv.
Syrup. ℥x.

Dissolve the hypophosphites in the water, add the quinia previously dissolved in a sufficient quantity of acid, and filter the syrup.

Syrup. Ferri et Quiniæ et Strychniæ Hypophosph.

℞ Ferri Hypophosph. ʒi.
Quiniæ Sulph. 40 grs.
Strychniæ, 3 grs.
Acid. Sulph. Dil. q.s.
Aquæ Destill. ℥ss.
Syrup. ℥x.

Dissolve the hypophosphite of iron in the water, add the alkaloids previously dissolved in sufficient acid, and filter into the syrup.

Dispenser.—You can prepare an imitation sal volatile as follows: the strength is nearly the same as the Spirit. Amon. Arom., B.P.:—

℞ Ammon. carb. ʒix.
Liquor Ammon. ʒiv.
Ol. Myrist. ʒss.
Ol. Limonis, ʒj.
Spirit Vini. Rect., Oj.
Aquæ Destill., Ovi.

Dissolve the carbonate of ammonia in the water; add the solution of ammonia, and then the essential oils previously dissolved in the spirit, and filter.

C. R. (Victoria).—(1) For further particulars relating to Wallace's patent gas burners, we beg to refer you to the manufacturers, Messrs. John Wright & Co., of Birmingham. (2) Cypripeden is an alkaloid obtained from the rhizomes of *Cypripedum pubescens* and *Cypripedum parviflorum.* Commercial strychnia is uncombined with any acidulous radical.

Can any one of our readers oblige *C. R.* with any information respecting Phosphodyne and the alkaloid Xanthoxylin?

W. D. C.—There is a lack of good English treatises on the art of perfumery. Mr. Rimmel's work is historic and scientific, but is perhaps better adapted for the drawing-room than for the laboratory. Piesse's "Art of Perfumery" is an excellent guide, but, unfortunately, it is out of print. The published price was 10*s.* 6*d.* Probably it may re-appear. Dussauce's "Perfumer's Guide" is about the same price. It contains many good formulæ. Trübner is the London publisher.

Beta.—We cannot obtain the formula at this moment, but will try to give it to you next month.